Gorham Bypass Study

PIN 8151.10, STP-8151(10)X
Cumberland County, Maine

Transportation and Engineering Technical Report

Prepared For The

Environmental Assessment

Submitted Pursuant to 42 U.S.C. 4332 (2)(c),
23 U.S.C 138 and 23 CFR 771
by:

U.S. Department of Transportation
Federal Highway Administration

and

Maine Department of Transportation

June 2003

CONTENTS

FIGURES

FIGURES (continued)

TABLES

TABLES (continued)

Study Specific Acronyms and Abbreviations

AMTRAK – National Railroad Passenger Corporation
CMP – Central Maine Power
GPCOG – Greater Portland Council of Governments
PACTS – Portland Area Comprehensive Transportation Committee
USM – University of Southern Maine
VC –Village Center District

Standard Acronyms and Abbreviations

AADT – Annual Average Daily Traffic
AASHTO – American Association of State Highway and Transportation Officials
ac – acre
ACHP – Advisory Council on Historic Preservation
ACOE – United States Army Corps of Engineers
AFDC – Aid to Families with Dependent Children
ARAN – Automatic Road Analyzer
ATR – Automatic Traffic Recorder
ATV – All Terrain Vehicle
B/C – Benefit/Cost Ratio
BMP – Best Management Practice
BTIP – Biennial Transportation Improvement Program
CAAA – Clean Air Act Amendments of 1990
CAL3QHC – EPA's Modeling Methdology for Predicting Pollutant Concentrations near Roadway Intersections
CBER – Center for Business and Economic Research
CEQ – Council on Environmental Quality
CERCLIS – Comprehensive Environmental Response, Compensation and Liability Information System
CFR – Code of Federal Regulations
CO – Carbon monoxide
CRF – Critical Rate Factor
dBA – Loudness (sound pressure level) measured on a logarithmic scale in units of decibels (dB), using an A-weighted filter
DEIS – Draft Environmental Impact Statement
DHV – Design Hour Volume
E & T Plant List Maine Natural Area Program – Official List of Endangered and Threatened Plants in Maine
EA – Environmental Assessment
EFH – Essential Fish Habitat
EIS – Environmental Impact Statement
EPA –U.S. Environmental Protection Agency
FEIS – Final Environmental Impact Statement
FEMA – Federal Emergency Management Agency
FHWA – Federal Highway Administration
FIRM – Flood Insurance Rate Map
FONSI – Finding of No Significant Impact
FMVECP - Federal Motor Vehicle Emission Control Program
FPPA – Farmland Protection Policy Act
ft - feet
GIS – Geographic Information Systems
GRP – Gross Regional Product
GW-A – Groundwater A
ha - hectare
HCAMP – Habitat Consultation Areas Mapping Program
HCL – High Crash Location
km - kilometer
kph – kilometers per hour
LAWCON – Land and Water Conservation Fund
Leq – One-hour equivalent sound level
LMA – Labor Market Area
LOS – Level of Service

LURC – Maine Land Use Regulation Commission
m - meters
MASC – Maine Atlantic Salmon Commission
MBPL – Maine Bureau of Parks and Lands
MDEP – Maine Department of Environmental Protection
MDIF&W – Maine Department of Inland Fisheries and Wildlife
MDOC – Maine Department of Conservation
MDOT – Maine Department of Transportation
MDWP – Maine Drinking Water Program
ME-GAP – Maine Gap Analysis Program
MHPC – Maine Historic Preservation Commission
mi -miles
MNAP – Maine Natural Areas Program
MOA – Memorandum of Agreement
MOBILE5b – Mobile Source Emission Factor Model
mph – miles per hour
MPO – Metropolitan Planning Organization
M.R.S.A. – Maine Revised Statutes Annotated
MSA - Metropolitan Satisticical Area
MSPO – Maine State Planning Office
NAAQS – National Ambient Air Quality Standards
NAC – Noise Abatement Criteria
NEPA – National Environmental Policy Act
NFIP – National Flood Insurance Program
NHPA – National Historic Preservation Act
NHS – National Highway System
NMFS – National Marine Fisheries Service
NO – Nitric Oxide
NOx – Nitrogen Oxides
NO2 – Nitrogen Dioxide
NPL – National Priority List
NPS – Nonpoint source
NPS – National Park Service
NRCS – Natural Resources Conservation Service
NRHP – National Register of Historic Places
NRIMC – Natural Resource and Information Mapping Center
NRPA – Maine Natural Resources Protection Act
NWI – National Wetlands Inventory
OD – Origin-Destination
OGIS – Maine Office of Geographic Information Systems
ORS – Outstanding River Segment
PAC – Public Advisory Committee
PEM – Palustrine Emergent Wetland
PFO – Palustrine Forested Wetland
PIN – Project Identification Number
PLT -- Plantation
ppm – parts per million
PSS – Palustrine Scrub-Shrub Wetland
PUB – Palustrine Unconsolidated Bottom
RCRA – Resource Conservation and Recovery Act
REMI – Regional Economic Models, Inc. of Amherst, MA
ROD – Record Of Decision
RTAC – Regional Transportation Advisory Committee
S.A.D. – School Administrative District

SCS – Soil Conservation Service (now the NRCS)
SHPO – State Historic Preservation Officer
SIP – State Implementation Plan
SSA – Sole Source Aquifer
STPA – Maine's Sensible Transportation Policy Act
STIP – Statewide Transportation Improvement Program
SWPPP – Stormwater Pollution Prevention Plan
T15 R4 – Township 15 Range 4 (example, numbers used vary)
TCP – Traditional Cultural Property
TDM – Transportation Demand Management
TIP – Transportation Improvement Program
TNM – Traffic Noise Model
TSM – Transportation Systems Management
Twp – Township
USA – United States of America
U.S.C. – United States Code
USDA – United States Department of Agriculture
USFWS – United States Fish and Wildlife Service
USGS – United States Geological Survey
USDOT – United States Department of Transportation
v/c – volume/capacity ratio
VOCs – Volatile Organic Compounds
vpd – vehicles per day
VHT – Vehicle-Hours Traveled
VMT – Vehicle-Miles Traveled
WELS – West of the easterly line of the state (this term is part of naming the unorganized townships of the State)
WPA – Wellhead Protection Area

Study Specific Terms

Gorham Village—is the commercial and retail center for the Town of Gorham. Gorham Village is comprised of one the following main roads: Routes 4/202 west (Narragansett Street) to Routes 4/202 east (Gray Road). Route 114 north (Fort Hill Road) and Route 114 south (South Street). Route 25 enters into Gorham Village from the west along State Street and continues east of Gorham Village as Main Street.

Study Area – Located in the southern third of the Town of Gorham, encompassing approximately 40 square kilometers (19 square miles). The Study Area is generally centered around Gorham Village and includes Mosher Corner at its northeast corner. To the southeast, the Study Area extends along Route 22 to the Scarborough Town Line. To the southwest, the Study Area extends to the Buxton Town Line, in the vicinity of U.S. Route 4/Route 202 and Osborne Road. West Gorham is at the northwest corner of the Study Area.

Standard Terms

85th Percentile Speed – The 85th-percentile speed is the speed at which eighty-five (85) percent of the vehicles on a given highway travel at or below. The most common application of the value is its use as one of the factors for determining the posted, legal speed limit of a highway section. In most cases, the field measurements for the 85th-percentile speed will be conducted during off-peak hours.

100-Year Floodplain – The portion of the floodplain submerged by the statistical flood event with a 1 percent probability of occurring in any year.

Activity center – Activity centers are generally defined as areas that generate economic activity or areas that support a major industry. Houlton, Presque Isle, Caribou and Madawaska are the largest economic activity centers in Aroostook County and are important regional transportation resources. Industrial parks and major trucking generators in Mars Hill, Easton, Ashland, Limestone, Fort Fairfield, Fort Kent, and Van Buren are other important activity centers within Aroostook County.

Additional Farmland Soils of Statewide Importance – Soils that are nearly Prime Farmland and that produce high yields of crops when treated and managed according to acceptable farming methods (see definition of "Prime Farmlands" below).

Advisory Council on Historic Preservation (ACHP) – The major policy advisor to the Federal government in the field of historic preservation. The 20 members of the Council are appointed by the President and include the Secretary of Agriculture, the Secretary of the Interior, the Architect of the Capitol, the chairman of the National Trust for Historic Preservation, and the president of the National Conference of State Historic Preservation Officers.

Alkaline – With a pH value greater than 7: generally applied to soils and surface water.

Alkalinity - A measure of the capacity of water to neutralize acid. Alkalinity is primarily a function of bicarbonate, carbonate, and hydroxide ions and is typically expressed in parts per million (ppm) of calcium or magnesium ions.

Annual Average Daily Traffic (AADT) – The total yearly traffic volume on a given highway segment divided by the number of days in the year. AADT is expressed in vehicles per day (vpd).

Aquifer – Rock or sediment that is saturated with water and sufficiently permeable to transmit economically significant quantities of water to wells and springs.

Archaeological resources – Materials and objects that remain below the ground surface as evidence of the life and culture of historic, prehistoric, or ancient people, such as artifacts, structures, or settlements. Resources of concern are located in areas known or suspected to contain subsurface artifacts of pre-european or post-european settlement populations. Areas of expected moderate to high archaeological sensitivity according to various factors including present and past topography, exposure, slope, distance to water, and availability of food.

Archaeologically Sensitive Shorelines – Shores of waterbodies determined by the Maine Historic Preservation Commission (MHPC) to be likely to yield prehistoric artifacts, based on a predictive model using topography, hydrology, and surficial soil types to assess sensitivity.

Archaeologically Sensitive Surficial Deposits – Land forms that are likely locations of prehistoric settlements or gathering places, based on a MHPC predictive model that uses surficial geology (waterbodies, alluvium, lake bottom deposits, glacial outwash, and eskers) to assess sensitivity.

Army Corps of Engineers (ACOE) – A federal agency that administers Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act; its regulatory programs address wetlands and waterways protection.

Arterials – Roads with high traffic volumes that provide linkage between major cities and towns and developed areas, capable of attracting travel over long distances. Basically, they provide service to interstate and intercounty travel demand. The arterial system typically provides for high travel speeds and the longest trip movements. The degree of access control on an arterial may range from full control (freeways) to entrance control on, for example, an urban arterial through a densely developed commercial area.

At-grade –The intersection of two roads, or a road and a railway, that cross at the same elevation.

At-Risk Watershed – Watersheds contributing to waterbodies that are at risk of eutrophication due to new development and phosphorus-laden runoff. These waterbodies include public drinking water supplies and waters that currently exhibit algal blooms or other signs of eutrophication. At-risk watersheds are defined according to criteria in Maine's Stormwater Law (5 M.R.S.A. § 3331).

Attainment area – A geographic area in which levels of a criteria air pollutant meet the health-based primary standard (National Ambient Air Quality Standard) for the pollutant. Attainment areas are defined using federal pollutant limits set by the U.S. Environmental Protection Agency.

Avian – Refers to all things of, relating to, or derived from birds

Basaltic – A dark-colored extrusive igneous rock composed chiefly of calcium plagioclase and pyroxene that underlies the oceanic basins and comprises oceanic crust.

Best Management Practice (BMP) – A structural and/or management practice employed before, during and after construction to protect receiving water quality. These practices either provide techniques to reduce soil erosion or remove sediment and pollutants from surface runoff.

Biodiversity –The diversity of genes, species, and ecosystems. This term includes the entire hierarchy of ecological organization, and encompasses regional ecosystem diversity (landscape diversity), local ecosystem diversity (community diversity), species diversity, and genetic diversity within populations of a species.

Biophysical region – A relatively homogeneous area based on analysis of topography, climate, and species richness of vertebrates and plants.

Business incubator – A facility intended to provide space and resources for newly-formed businesses.

Calcareous pelite – A fine-grained sedimentary rock consisting mostly of clay and/or silt that has an abundance of calcium carbonate.

Cambrian – The first geologic time period of the Paleozoic Era. The Cambrian period spanned from approximately 590 to 505 million years ago.

Carbon monoxide (CO) – A colorless, odorless, tasteless gas formed in large part by incomplete combustion of fuel. Full combustion activities (i.e. transportation, industrial processes, space heating, etc.) are the major sources of CO.

Collector Roads – Roads characterized by a roughly even distribution of their access and mobility functions. These routes gather traffic from local roads and streets and deliver it to the arterial system. Traffic volumes and speeds will typically be lower than those of arterials.

Community Cohesion – The interactions among persons and groups in a community, including social relationships and patterns.

Community Supply – A public water system that is comprised of one or multiple wells or reservoirs that serves at least 25 residents throughout the year.

Conglomerate – A clastic sedimentary rock composed of lithified beds of rounded gravel mixed with sand.

Controlled-Access Highway – A highway that provides limited points of access and egress. Freeways, such as I-95, are controlled access highways in which access points occur only at interchanges. These highways serve mobility needs, and are designed to accommodate higher travel speeds.

Cost effectiveness – In the context of this study, cost effectiveness is an economic measure used to evaluate and compare the corridors in this study. Cost effectiveness is defined as the present value of the 2030 gross regional product (GRP) growth per dollar of construction cost. In this way, cost effectiveness compares the relative future economic benefits against the size of the investment required to generate those benefits.

Cumulative impacts – The impacts on the environment that result from the incremental impact of a project when added to other past, present, and reasonable foreseeable future actions regardless of what agency or person undertakes such other actions.

Daily traffic volume – The number of vehicles that use a given roadway over a 24-hour period in both directions.

dBA –An abbreviation for A-weighted decibel. The decibel is a unit used to describe sound pressure levels on a logarithmic scale. For community noise impact assessment, an A-weighted frequency filter is used to approximate the way humans hear sound.

Deciduous – Refers to woody vegetation, such as oak or maple trees, that shed their leaves after the growing season.

Deer Yard – Areas of softwood-dominated forest that provide food resources and shelter for deer during severe winter conditions.

Demand – Vehicular traffic demand (volume) on a given highway segment, expressed in vehicles per day (vpd).

Demand shift – The change in demand (volume) on a given highway segment, expressed in vehicles per day (vpd). Demand shifts can be caused by new corridors that provide a faster and/or shorter travel route.

Design Hourly Volume (DHV) – The hour used for geometric design of highways, typically the 30th highest traffic volume of the year.

Design speed – The maximum safe speed that can be maintained over a specified section of highway when conditions are so favorable that the design features of the highway govern. The design speed should equal or exceed the posted/regulatory speed limit of the facility.

Development node – An area that has experienced or is expected to experience development and a resulting growth in employment and/or population.

Devonian – The oldest period of the Upper Paleozoic Era, covering a time span between approximately 400 and 360 million years ago.

Disadvantaged Population – A group of people, living in one area, who have a median income below the federal poverty level, or who exhibit other indicators of economic disadvantage.

Dolostone – A carbonate rock made up predominantly of the mineral dolomite, $CaMg(CO_3)_2$.

Draft Environmental Impact Statement (DEIS) – The document prepared by the Federal Highway Administration (FHWA) in accordance with FHWA National Environmental Policy Act (NEPA) regulations (23 CFR Part 771). These regulations require that the EIS evaluate all reasonable alternatives considered, discuss the reasons that alternatives have been eliminated from detailed study, summarize the studies, reviews, consultations, and coordination required by environmental laws and Executive Orders.

Driver eye height – The height above the road of the eyes of vehicle drivers, a function of the seating height, and important in stopping sight distance considerations.

Ecoregion – An area defined by similar climate, topography, and biological communities.

Edge effect – The potential impacts to natural plant and animal communities that result from the creation of new edge habitat, which may include increased predation, decreased reproductive success, and changes in community composition.

Edge habitat – An area along a transitional zone between two or more vegetation cover types that provides feeding, breeding, nesting, or cover habitat for wildlife.

Endangered Species – Any species which is in danger of extinction throughout all or a significant portion of its range.

Environmental Assessment (EA) – The document prepared by the Federal Highway Administration (FHWA) in accordance with FHWA National Environmental Policy Act (NEPA) regulations (23 CFR Part 771). The EA provides sufficient evidence of analysis that determines whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact. The environmental assessment includes documentation specified in 40 CFR parts 1500-1508, §1508.9 and §1508.13.

Environmental Justice – Executive Order 12898 requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental impacts on minority populations and low-income populations."

Esker – An elevated linear or sinuate glacial landform resulting from deposition of glacial streambed gravels.

Essential Fish Habitat (EFH) – Those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity, as defined by the regional Fishery Management Council.

Eutrophication – Change in the biological and physical characteristics of a body of water due to increased nutrient input that result in increased productivity. Eutrophication may occur naturally or through man-induced changes in nutrient inputs.

Farmland Protection Policy Act (FPPA) – A statute enacted in 1981 by the United States Congress to ensure that significant agricultural lands be protected from conversion to non-agricultural uses. For highway projects receiving federal aid, the regulations promulgated under the FPPA (7 CFR Part 658, 1984) require a state highway authority (MDOT) to coordinate with the USDA Natural Resources Conservation Service. The FPPA regulates four types of farmland soils; prime farmland, unique farmland, farmland of state-wide importance, and farmland of local importance.

Farmland Soils – Soils suited to producing crops; those with soil quality, growing season and moisture supply needed to produce a sustainable yield when treated and managed using acceptable methods. Specifically, farmland soils are those soil types designated by the Natural Resources Conservation Service (NRCS) in accordance with the Farmland Protection Policy Act (FPPA) of 1981 by the United States Department of Agriculture (USDA).

Federal Emergency Management Agency (FEMA) – A federal agency that regulates federal actions in floodplains.

Federal Highway Administration (FHWA) – The branch of the U.S. Department of Transportation responsible for administering the funding of federal-aid highway projects.

Federal-Aid System – The federal-aid system consists of those routes within Maine that are eligible for the categorical federal highway funds.

Felsic – A generally light-colored igneous rock with significant amounts of silica, oxygen, aluminum, and potassium.

Final Environmental Impact Statement (FEIS) – The document prepared after circulation of a draft EIS and consideration of comments received. FHWA NEPA regulations (23 CFR Part 771.125) require that the FEIS identify a preferred alternative, evaluate all reasonable alternatives considered, discuss and respond to substantive comments on the EIS, summarize public involvement, and describe the mitigation measures that will be incorporated into the proposed action.

Floodplain – The level area adjoining a river channel inundated during periods of high flow.

Floodway – The channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order that the 100-year flood is carried without substantial increases in flood heights.

Forest block – Units of forest uninterrupted by roadways or other disturbance.

Fragmentation – Subdivision of a forest or other habitat into isolated patches by roads, land clearing, or other human or natural alterations of the landscape, accompanied by the loss of a certain portion of the original habitat.

Freeways – The freeway (or interstate) is the highest level of arterial. Full control of access, high design speeds and a high level of driver comfort and safety characterize these highways.

Functional Conflict – Highways provide a balance between providing access (with multiple access points) and mobility (with limited access points). Freeways are designed to maximize mobility and serve regional traffic demands as opposed to local roads (or collectors) that provide multiple access points to adjacent land uses (residences or businesses). Functional conflicts arise when regional traffic that would be better served on a Freeway uses local roads.

Geographic Information System (GIS) – A computer-based application used to perform spatial analysis.

Geometric deficiency - A deficiency that occurs when a highway's geometric characteristics (lane width, shoulder width, horizontal curvature, vertical grade, etc.) do not meet prevailing design standards.

Glacial outwash – Surficial sand and gravel sediments deposited ahead of a glacier by glacial meltwater.

Glacial till – Compact surficial sediments consisting of poorly sorted, mixed minerals and rocks, deposited by melting glaciers.

Grade – The slope of a road along the direction of travel, normally characterized by the vertical rise per unit of longitudinal distance.

Grade separation – The intersection of two roads, or a road and a railway, that cross at different elevations. One roadway overpasses or underpasses the other roadway with a structure(s).

Gross Regional Product (GRP) – Gross Regional Product is one of the major economic indices of the socio-economic development of a region. GRP is equal to the total of added values in the regional economic industries, estimated as a difference between production and intermediate consumption.

Groundwater Recharge Protection Areas – Areas of land designated by water resource agencies that rainwater or snowmelt percolates and replenish the underlying aquifer in the area of a public well. These areas require special protection because they directly affect the quality and safety of the public drinking water supply.

GW-A – The highest groundwater classification in Maine. GW-A is applied to water suitable for direct human consumption without treatment.

Habitat Consultation Areas Mapping Program (HCAMP) – A cooperative program of the MDIF&W and MNAP to provide mapping showing the areas of state-listed endangered and threatened animals and plants.

Herpetofauna – Refers to reptile and amphibian species.

High Crash Location (HCL) – A High Crash Location is an intersection or highway segment that experiences an abnormally high number of accidents relative to the traffic demands that are served. For the State of Maine, the Maine Department of Transportation identifies HCLs.

Highway Reconstruction/Rehabilitation – Reconstruction of an existing highway is undertaken when the pavement structure or alignment of the existing facility is deficient. Reconstruction includes removal and replacement of the entire pavement structure, significant changes in the vertical or horizontal alignment, or addition of lanes. Rehabilitation includes resurfacing and other minor repairs intended to extend the service life of the existing facility and enhance highway safety.

Historic resources – Properties, structures and districts that are listed in or have been determined to be eligible for listing in the National Register of Historic Places.

Hourly traffic volume – The number of vehicles that use a given road over a 1-hour period.

Hydric soils – Soils that are saturated, flooded, or ponded long enough during the growing season to develop at least temporary conditions where there is no free oxygen in the soil around the roots. Hydric soils correspond to federally and state regulated wetlands in many circumstances.

Hydrologic regime – The frequency and duration of inundation or soil saturation of a given area.

Impacted Receiver – A condition that exists if sound levels approach or exceed the Noise Abatement Criteria (NAC) or a 15-decibel (dBA) increase in ambient noise levels.

Impervious surface – Relating to hydrology. A surface through which precipitation cannot penetrate, causing direct runoff or perching (examples include asphalt paving roofs, and densely compacted gravel).

Interstate – A freeway-type highway that is part of the National Highway System.

Interstate Highway System – The network of Interstate Highways established by the Federal-Aid Highway Act of 1956. The statute established a 41,000-mile network of controlled-access highways (expanded to 42,000 miles by legislation in 1968) intended to connect all metropolitan areas with populations greater than 50,000 and all state capitals.

Just-In-Time Delivery – Commercial deliveries that arrive immediately prior to their use. Just-in-time deliveries help producers minimize storage or warehousing space.

Kettle – A depressional glacial landform resulting from a melting block of ice embedded in till.

Labor Market Area (LMA) – Labor market areas are regional areas with a high concentration of employment opportunities. These are economically integrated units within which workers may readily change jobs without changing their place of residence.

Lacustrine – Of and related to lakes.

Land and Water Conservation Fund – A system for funding Federal, State and local parks and conservation areas, created by the Land and Water Conservation Fund Act of 1964.

Limited-Access facility – A highway where access to abutting properties is restricted or limited by control of the right-of-way.

Link – A new or existing highway segment between two defined end-points.

Lithic sandstone (graywacke) – A variety of sandstones characterized by angular-shaped grains of quartz and feldspar and small fragments of dark rock set in a matrix of finer particles.

Local Roads and Streets – All public roads and streets not classified as arterials or collectors will have a local classification. Local roads and streets are characterized by many points of direct access to adjacent properties and have relatively minor role in accommodating mobility. Speeds and traffic volumes are usually low.

Mafic – A generally dark-colored igneous rock with significant amounts of one or more ferromagnesian minerals, or formed from a magma with significant amounts of iron and magnesium.

Magnuson-Stevens Fishery Conservation and Management Act – Legislation (16 U.S.C. 1855(b)) governing all fisheries resources within 320 kilometers (200 miles) of the U.S. coast that established regional Fishery Management Councils and required the preparation of Fisheries Management Plans.

Maine Highway Design Guide – A tool developed by the Maine Department of Transportation that provides guidance for the design of roads and highways in the State of Maine in addition to the Federal Highway Administration design criteria.

Maine Land Use Regulation Commission (LURC) – Title 12, M.R.S.A, Chapter 206 –A Commission established by Title 12, M.R.S.A., Chapter 206 to administer the Land Use Regulation Law (12 M.R.S.A. § 681) by preparing land use standards prescribing standards for the use of air, lands and waters within the plantations and unorganized townships of Maine.

Maine's Sensible Transportation Policy Act (STPA) – Maine's Sensible Transportation Policy Act is a state law enacted in 1991 by the citizens of Maine that provides a decision making framework for examining a range of alternatives. The STPA is applicable to transportation planning decisions, capital investment decisions, and project selection decisions made by the Maine Department of Transportation (MDOT).

Maine State Design Standards – State adopted (February 1997) travelway and shoulder design width criteria for non-National Highway System facilities.

Major Collector Road – Collector Roads that tend to serve higher traffic volumes than other Collector Roads. Major collector roads typically link arterials. Traffic volumes and speeds will typically be lower than those of Principal Arterials.

Mesoscale air quality analysis – A regional-level analysis of air for chemical constituents

Metamorphosed – With respect to rock, a rock formation that has been altered by the action of heat and pressure.

Microscale air quality analysis – An analysis of air for chemical constituents, typically conducted for a small study area such as an intersection.

Mill Rate – The property tax rate, per $1,000 of assessed value.

Minor Arterial – Minor arterials are highways that tend to link Collector Roads to Principal Arterials and serve lower traffic volumes than typical arterials. Minor Arterials are also typically designed at lower travel speeds than Principal Arterials.

Mitigation – Actions that avoid, minimize, or compensate for potential adverse impacts.

Multi-modal service – The act of providing alternative modes or choices of transportation service, such as bus, rail, taxi, etc.

National Ambient Air Quality Standards (NAAQS) – The prescribed level of pollutants in the outside air that cannot be exceeded during a specified time in a specified geographic area.

National Environmental Policy Act of 1969, as amended (NEPA) – The federal legislation that requires an interdisciplinary approach in planning and decision-making for federal-aid actions. The Act includes requirements for the contents of environmental impact statements that are to accompany every recommendation for major federal actions significantly affecting the quality of the human environment. The interdisciplinary study approach includes the analysis of potential impacts to the natural, social and economic environment.

National Highway System (NHS) – The National Highway System is a system of those highways determined to have the greatest national importance to transportation, commerce and defense in the United States. It consists of the Interstate highway system, logical additions to the Interstate system, selected other principal arterials, and other facilities that meet the requirements of one of the subsystems within the NHS.

National Historic District – An area, comprising numerous buildings and their setting, identified as historic in the National Register of Historic Places.

National Priority List (NPL) – The "Superfund" statute (42 U.S.C. Sect. 9601) requires the EPA to establish a National Priorities List of sites which are to be given top priority consideration for removal of hazardous substances and remedial action.

National Register of Historic Places – A list of structures, sites and districts of national historical significance as determined by the Advisory Council on Historic Preservation under the National Historic Preservation Act.

National Wetlands Inventory (NWI) – A program administered by the U.S. Fish and Wildlife Service for mapping and classifying wetland resources in the United States.

Natural Resources Conservation Service (NRCS) – Formerly the Soil Conservation Service, NRCS is a department within the United State Department of Agriculture that is responsible for administering the Farmland Protection Policy Act.

New Location Highway – A highway proposed to be constructed on land not currently used for transportation facilities.

Nitrogen Oxides (NOx) – Nitric oxide (NO) and Nitrogen dioxide (NO2) are collectively referred to as oxides of nitrogen (NOx). NO forms during high temperature combustion process. NO2 forms when NO further reacts in the atmosphere. NOx reacts with the sunlight to form ozone, a colorless gas associated with smog or haze conditions. Ozone is a pollutant regulated by the Clean Air Act Amendments of 1990.

Noise abatement criteria (NAC) – Noise levels measured in decibels that are used as a basis of comparison for evaluating the impact from predicted design year noise and for determining whether noise abatement measures should be considered.

Noise abatement measures – Actions that reduce traffic noise impacts. Noise abatement measures can be traffic management measures, alteration of horizontal and vertical alignments, acquisition of property rights for construction of noise barrier, construction of noise barriers, acquisition of real property or interest for buffer zones, or noise insulation of public use or nonprofit institutional structures.

Noise receptor – Locations that may be affected by noise: sensitive receptors include residences, parks, schools, churches, libraries, hotels, and other public buildings.

Non-Community Supply – A public water system that serves at least 25 persons at least 60 days out of the year and is not a community or a seasonal water system.

Non-Point Source pollution (NPS) – Pollution of waterbodies that does not originate at a single specific source such as an industrial discharge or discharge from a wastewater treatment plant. Sources of non-point pollution include runoff from highways, agricultural fields, golf courses, and lawns.

Other Principal Arterial – Highways that provide access between arterials and a major port, airport, public transportation facility or other Intermodal transportation facility. Other Principal Arterials tend to serve lower traffic demands than Principal Arterials.

Outstanding River Segment (ORS) – A section of a river or stream designated by the Maine Natural Resources Protection Act (12 M.R.S.A. § 403) for protection because of the special resource values of its flowing waters and shorelines.

Ozone – A gas which is a variety of oxygen. Ozone is a pollutant regulated by the Clean Air Act Amendments of 1990. Ground-level ozone is the main component of smog. Ozone is not directly emitted by motor vehicles, but is formed when oxides of nitrogen react with sunlight.

Palustrine – The group of vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie. Palustrine wetlands may be situated shoreward of lakes, river channels, or estuaries; on river floodplains; in isolated catchments; or on slopes.

Palustrine Forested Wetland (PFO) – A palustrine wetland dominated by trees, commonly referred to as a swamp.

Palustrine Emergent Wetland (PEM) – A palustrine wetland dominated by herbaceous species, typically cattails, sedges and grasses, commonly referred to as a marsh.

Palustrine Scrub-Shrub Wetland (PSS) – A palustrine wetland dominated by shrubs.

Passing Sight Distance – The distance a passing vehicle on a two lane road will travel during a passing movement, plus an equal distance that an oncoming vehicle will travel during that time, plus a clearance distance or safety factor.

Peak hour – The hour of the day when traffic volume on a given roadway is highest. A separate peak hour can be defined for morning and evening periods.

Peak hour volume – The traffic volume that occurs during the peak hour, expressed in vehicles per hour (vph). Peak hour volumes are typically 10 to 15 percent of daily volumes.

Peak Hour Leq – Represents the noisiest hour of the day/night and usually occurs during peak periods of motor vehicle traffic. The Leq is the equivalent sound level measurement, which means it averages background sound levels with short-term transient sound levels and provides a uniform method for comparing sound levels that vary over time.

Posted speed limit – The speed posted for a facility based on engineering and traffic investigation.

Prehnite – A silicate mineral that forms in the cavities of basaltic rocks, low temperature hydrothermal fissures, and in limestone.

Primary/direct impacts – The immediate effects on the social, economic, and physical environment caused by the construction and operation of a highway; these impacts are usually experienced within the right-of-way or in the immediate vicinity of the highway or other element of the proposed action.

Prime Farmland Soil – Soil map units that are designated by the Natural Resources Conservation Service as having the properties needed to produce sustained high yield crops when managed with modern farming techniques.

Principal Arterials – Highways in rural and urban areas that connect urban areas, international border crossings, major ports, airports, public transportation facilities or other Intermodal transportation facilities.

Pumpellyite – A silicate mineral, closely related to epidote that forms in pelitic and dolomite rocks.

Rare and Exemplary Natural Community – An assemblage of interacting plants and animals and their common environment, recurring across the landscape, in which the effects of recent human interference are minimal. Rare natural communities are those which occur infrequently. Exemplary natural communities are exceptional representatives of more common natural communities.

RCRA Generator – An entity that produces hazardous waste regulated under the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. sect. 6901), which mandates the appropriate identification, tracking, and disposal of hazardous waste.

Record of Decision (ROD) – The document, prepared by the Federal Highway Administration, that presents the basis for the Federal agency action, summarizes any mitigation measures to be incorporated, and documents any required Section 4(f) approvals. No Federal agency action may be undertaken until a Record of Decision has been signed. A Record of Decision is prepared no sooner than 30 days after the public release of the FEIS.

Relocations – The displacement of a residence, business or other structure from a property owner, for public use, that requires the residents or business to be moved to an alternate location.

REMI Model – The REMI Model (Regional Economic Models Inc.) is a widely used and accepted econometric model maintained and updated by the Center for Business and Economic Research at the University of Southern Maine.

Riparian – An area of land that encompasses and is contiguous to a stream or other water body.

Riverine – Of and relating to rivers.

Safety deficiency – In the context of this study, a safety deficiency is a highway segment or intersection that contains a high crash location (HCL).

Secondary impacts – Impacts that are caused by the proposed action and are later in time or farther removed in distance, but are still reasonably foreseeable; secondary impacts may include induced changes to land use patterns, population density or growth rate, and related effects on natural systems, including ecosystems.

Section 10 of the Rivers and Harbors Act of 1899 (Section 10) – Legislation (33 U.S.C. Section 403) that resulted in a permit being required from the Army Corps of Engineers for projects requiring construction in or over navigable waters, the excavation from or dredging or disposal of materials in such waters, or any obstruction or alteration in a navigable water (e.g. stream channelization).

Section 106 of the Historic Preservation Act (Section 106) – The National Historic Preservation Act of 1966 (16 U.S.C. 470f), Section 106, requires Federal agencies to take into account the effect of their undertakings on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council on Historic Preservation the opportunity to comment on such undertakings.

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C., Section 303) (Section 4(f)) – Legislation protecting publicly owned parks, public recreation areas, historic properties or wildlife and waterfowl refuges. The statute states that no Department of Transportation project may use land from these areas unless there is demonstrated to be no prudent and feasible alternative to using the land, and the project includes all possible planning to minimize harm resulting from the use.

Section 404 of the Clean Water Act (Section 404) – The Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 401 et seq.) is the enabling legislation for protection of waters of the United States by the Army Corps of Engineers and the U.S. Environmental Protection Agency.

Section 6(f) of the Land and Water Conservation Funds Act (Section 6(f)) – Legislation that provides for the public purchase and preservation of tracts of land.

Sight distance – The distance that a driver can see along the roadway before curvature or obstructions block the view.

Significant Sand and Gravel Aquifer – A porous formation of ice-contact and glacial outwash sand and gravel that contains significant removable quantities of water which is likely to provide drinking water supplies.

Significant Wildlife Habitat – Wildlife habitats, including deer wintering yards, waterfowl and wading bird habitat, seabird nesting habitat, and significant vernal pools, that are protected under 38 M.R.S.A. § 480-B.

Silurian – The third geologic time period of the Paleozoic. The Silurian period lasted from approximately 438 to 408 million years ago.

Sole Source Aquifer (SSA) – An aquifer designated by EPA as the "sole or principal source" of drinking water for a given aquifer service area; that is, an aquifer that is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should the aquifer become contaminated.

State Implementation Plan (SIP) – A plan created under The 1990 Clean Air Act Amendments (CAAA) that establishes emission reduction requirements for ozone and carbon monoxide non-attainment areas. Proposed projects must demonstrate that the impacts of their emissions are consistent with the appropriate SIP.

Stormwater Pollution Preservation Plan (SWPPP) – A plan required for major construction projects under the EPA's National Pollutant Discharge and Elimination System (NPDES) general permit for construction activities. The SWPPP is required to address measures to prevent erosion, sedimentation, and other potential discharges of pollutants to water bodies and wetlands.

Stormwater runoff – The portion of precipitation that flows toward stream channels, lakes, or other waterbodies as surface flow.

Surface Water Supply Watershed – The watershed that contributes to a public drinking water supply.

System compatibility – System compatibility describes how well alternatives, either new highways or upgrades, fit into the existing highway network and the planned transportation improvement plan.

System continuity – System continuity is defined by how often the existing highways transition between wide, higher speed segments to narrow, low speed segments.

Threatened Species – Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Traditional Cultural Property (TCP) – A property or site that is eligible for inclusion in the National Register of Historic Places because of its association with cultural practices or beliefs of a living community that are rooted in that community's history and are important to maintaining the continuing cultural identity of the community.

Traffic generator – Any business, government office, or place of employment or destination that generates or attracts traffic.

Transportation deficiencies – A highway related facility that is unable to safely and efficiently satisfy travel demands because of the intensity of traffic volumes, capacity, and/or safety.

Transportation Demand Management (TDM) – A system of actions whose purpose is to alleviate traffic problems through improved management of vehicle trip demand as opposed to adding new highway segments.

Transportation Improvement Program (TIP) – A staged multiyear program of transportation projects funded by the Federal Highway Administration and Federal Transit Administration.

Transportation Systems Management (TSM) – Relatively low cost measures to increase capacity and/or provide safety improvements on the existing transportation system. These measures typically include traffic signal timing or phasing adjustments, designation of turning lanes at specific intersection or driveways, access management improvements, and enhanced signage or markings.

United States Department of Agriculture (USDA) – A federal agency responsible for administering programs that address farming issues

United States Environmental Protection Agency (EPA) – A federal agency responsible for administering programs that address environmental issues.

United States Fish and Wildlife Service (USFWS) – A federal agency responsible for addressing the protection of fish and wildlife including rare, threatened, or endangered species. The USFWS plays an advisory role in the Section 404 regulatory program administered by the U.S. Army Corps of Engineers.

Upgrade – A geometric improvement to an existing highway segment.

Upper Devonian – The Devonian Period, which lasted from approximately 408 to 360 million years ago, contains three epochs. The Upper Devonian Epoch lasted from approximately 365 to 360 million years ago.

Vegetation cover type – A biological community characterized by certain vegetation characteristics, such as hardwood forest, mixed forest, shrub, herbaceous, and urban or residential managed vegetation.

Vehicle-Hours Traveled (VHT) – VHT is a measure of automobile use and trip time. One vehicle traveling one hour constitutes one vehicle-hour.

Vehicle-Miles Traveled (VMT) – VMT is a measure of automobile use and trip length. One vehicle traveling one mile constitutes one vehicle-mile.

Vernal pool – A temporary pool of surface water that provides breeding habitat for certain amphibian and invertebrate species.

Volatile Organic Compounds (VOCs) – Colorless gaseous compounds originating, in part, from the evaporation and incomplete combustion of fuels. In the presence of sunlight VOCs react to form ozone, a pollutant regulated by the Clean Air Act Amendments.

Waterfowl and Wading Bird Habitat – Wetlands that provide habitat for waterfowl (geese, brant, ducks) and wading birds (heron, egrets, bittern, rails), and that meet certain criteria for size, quality, and percent open water as established by Department of Inland Fish & Wildlife regulations.

Watershed – A region or area that contains all land ultimately draining to a water course, body of water, or aquifer.

Wellhead Protection Area (WPA) – Areas of land where human activities are regulated to protect the quality of ground water that supplies public drinking water wells.

Wetland – Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wild and Scenic River – A river or river segment, designated by the National Park Service, because of the outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values (16 U.S.C. 1271-1287).

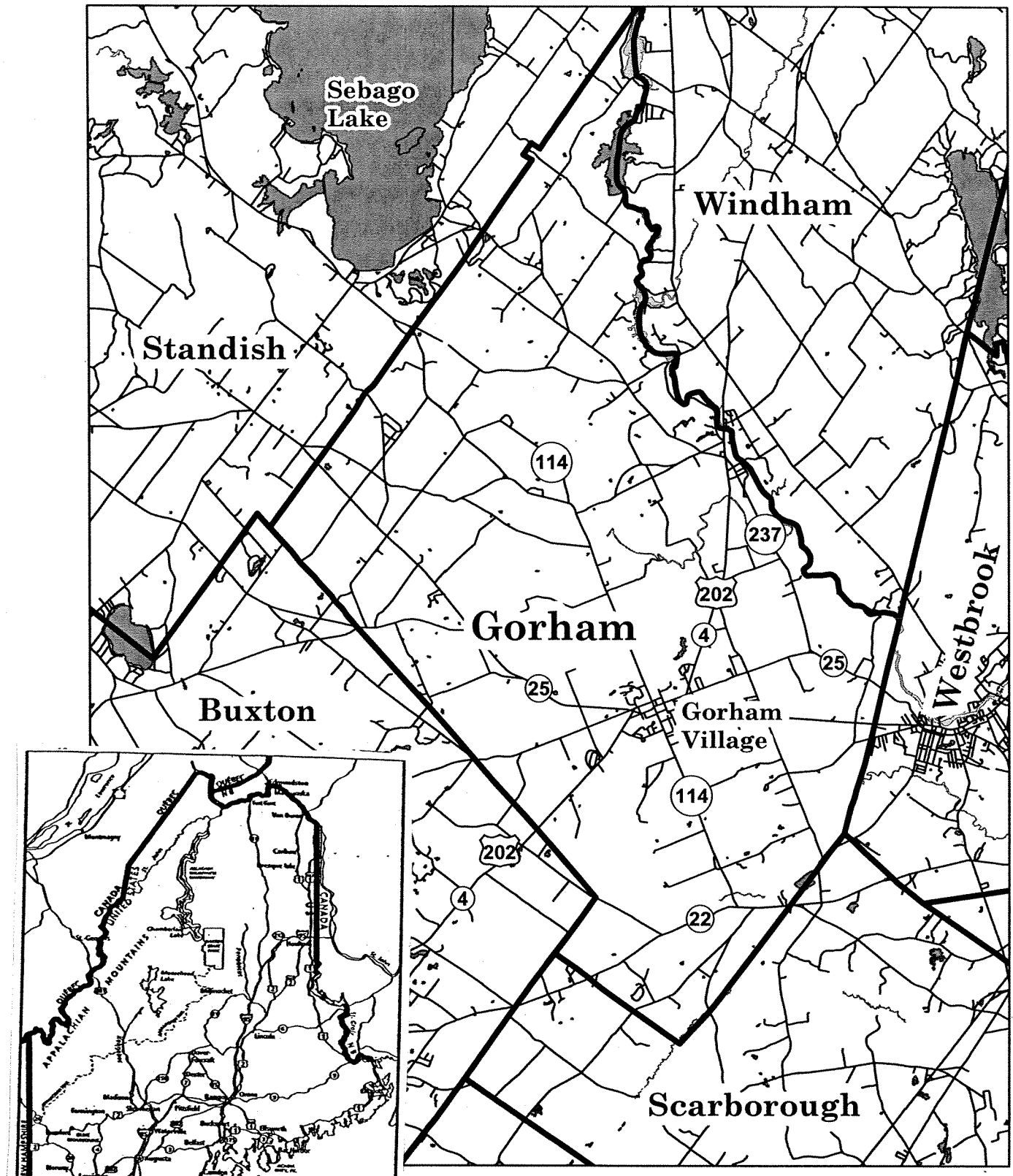
1. Introduction

This report documents the existing and predicted transportation conditions in the Gorham Bypass Study Area. This report also documents engineering design studies conducted in support of the environmental assessment.

The Town of Gorham is located 9.5 miles (15.3 km) west of Portland, Maine, Cumberland County, and is part of the Greater Portland Metropolitan Statistical Area (MSA). Highway access to Gorham is provided by U.S. Route 202, and State Routes 4, 22, 25, 114, and 237. State Routes 22 and 25 connect with Interstate Route 95 (I-95), the Maine Turnpike, approximately 11.3 km (seven miles) to the east of Gorham Village (see Figure 1-1, page 1-2).

The Study Area (see Figure 1-2, page 1-3) is located in the southern third of the Town of Gorham and encompasses approximately 19 square miles (49.2 km) (Figure 1-1, page 1-2). The Study Area is generally centered around Gorham Village and includes Mosher Corner, at its northeast corner. To the southeast, the Study Area extends along Route 22 to the Scarborough town line.. To the southwest, the Study Area extends to the Buxton town line, in the vicinity of U.S. Route 202/Route 4 and Osborne Road. West Gorham is at the northwest corner of the Study Area.

The study is being prepared to address one component of the Preferred Improvement Strategy for the Gorham to Portland Route 25 Corridor, "a Southerly Bypass of Gorham Village, from Route 25/Ossipee Trail west of the Village to Route 114/South Street south of the Village." (PACTS, 1997) The technical report is part of a Environmental Assessment prepared in accordance with National Environmental Policy Act (NEPA) requirements as outlined in 40 CFR 1500-1508.



Not To Scale

Gorham Bypass Study
Transportation and Engineering Technical Report

Location Map

Figure 1-1

2 Existing Transportation Conditions

The transportation system serving the Town of Gorham is primarily highway-oriented. Highway access to the Town of Gorham is provided by U.S. Route 202, and State Routes 4, 22, 25, 114, and 237. State Routes 22 and 25 connect with Interstate Route 95 (I-95), the Maine Turnpike, approximately 11.3 kilometers (seven miles) east of Gorham Village.

Public transit and non-highway transportation facilities in or around the Study Area are limited. The Greater Portland Transit District (METRO) provides transit service between Portland and Westbrook, but existing services do not extend to Gorham. The University of Southern Maine (USM) provides shuttle bus service between Gorham and Portland/South Portland for staff and students on days when USM is in session. Bicycle and pedestrian facilities within the Study Area are limited. Sidewalks can generally be found within Gorham Village, but are limited outside of Gorham Village. There are no exclusive bikeways in the Study Area. Passenger and freight rail facilities do not exist in the Study Area, nor is there service to communities neighboring Gorham. The closest freight rail service is located in Westbrook, Maine. Passenger rail service (AMTRAK) between Portland and Boston, Massachusetts is available.

The following describes each highway corridor within the Gorham Bypass Study Area.

State Route 25 (Route 25) in the Study Area is an urban arterial traveling east/west through Gorham Village. It carries primarily through traffic traveling east/west and west/south. Route 25 is a two-lane highway with a posted speed limit of 30 mph through Gorham Village. Urban characteristics include paved shoulders, with sidewalks on one or both sides. Rural characteristics include rolling terrain with limited paved and often gravel shoulders. Business and homes are predominant in the urban sections, while scattered homes can be found in rural sections.

US Route 202/State Route 4 (Route 202) in the Study Area is an urban arterial traveling southwest and northeast outside of Gorham Village. Route 202 joins Route 25 through Gorham Village. Route 202 is a two-lane highway with a posted speed of 45 mph outside of Gorham Village. Rural characteristics include rolling terrain with limited paved and often gravel shoulders. Urban characteristics are similar to Route 25. Business and homes are predominant in the urban sections, while scattered homes can be found in rural sections.

State Route 114 (Route 114) in the Study Area is a rural arterial traveling north/south through Gorham Village. It carries primarily through traffic, although the percentage of local traffic is higher from Route 114 than from other routes. Route 114 is a two-lane highway with a posted speed of 25 mph through Gorham Village and 30 mph outside Gorham Village. Rural characteristics include rolling terrain with limited paved and often gravel shoulders. Urban characteristics are similar to Route 25. Business and homes are predominant in the urban sections, while scattered homes can be found in rural sections.

The approach used to evaluate the existing traffic conditions in the Study Area began with a comprehensive data collection effort, including: (1) turning movement counts at 10 intersections; (2) vehicle counts along 40 highway segments; and, (3) historical crash

data from the MDOT's Crash Records section. Data were analyzed to identify dominant travel patterns, truck travel patterns, traffic operational characteristics, and high crash locations.

2.1 Traffic Data Collection

2.1.1 Turning Movement Counts

In mid-October 1999, turning movement counts were conducted at major intersections in and around Gorham Village to provide the information necessary to evaluate the current performance of each intersection. The turning movement counts also provided a baseline of data used to calibrate the Portland Area Comprehensive Transportation Committee (PACTS) travel demand model used for this study.

An objective of the traffic count program was to document traffic patterns during the morning and evening weekday peak hour travel periods. In order to achieve this objective, the turning movement counts were conducted in the following manner:

- Counts were taken over a six-hour period—from 6AM to 9AM, and from 3PM to 6PM to capture peak-hour traffic flows.
- Counts were taken on Tuesdays, Wednesdays, and Thursdays to avoid the effects of weekend traffic on travel patterns.
- Weekday October counts were considered to be near-peak conditions, as they include commuter-related, Gorham school, and University-related traffic.

Figure 2-1 illustrates the locations at which the turning movement counts were taken.

Figure 2-1 - Locations of Turning Movement Counts

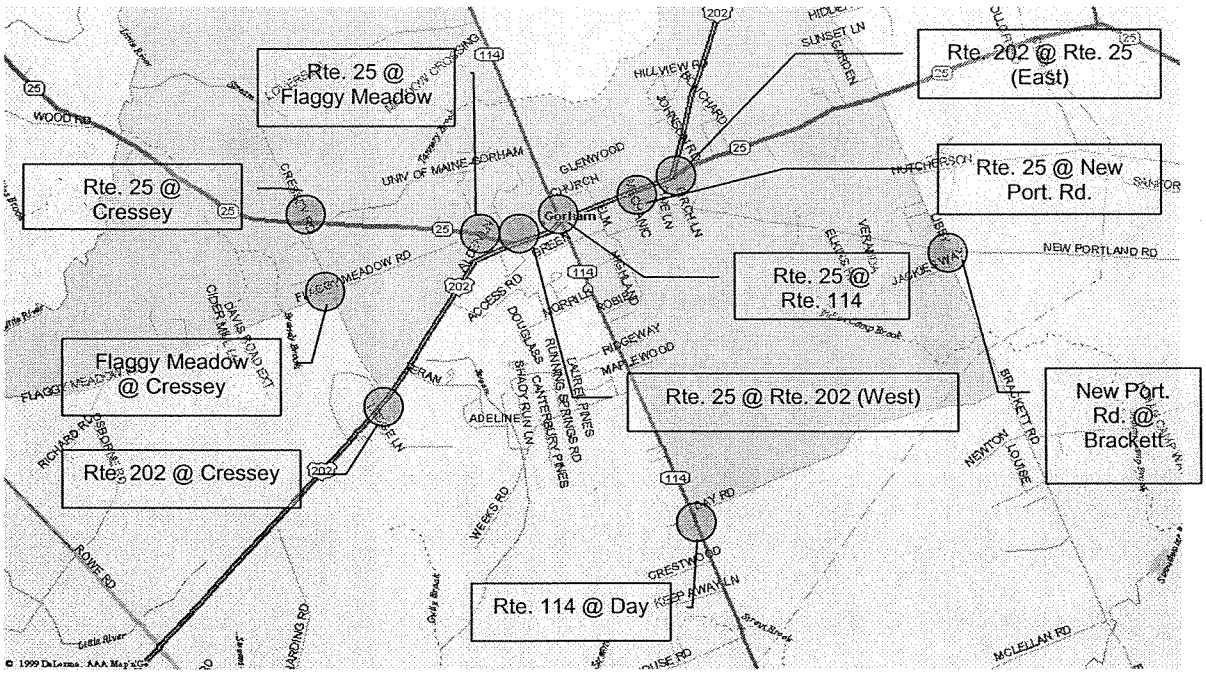


Table 2-1 lists the dates turning movement counts were taken and identifies the type of traffic control present at each intersection.

Table 2-1 - Locations and Dates of Turning Movement Counts

Location	Date	Control Type
Route 25 @ Cressey Rd.	Wed, 10-13-99	Stop Sign
Route 25 @ Flaggy Meadow Rd.	Thu, 10-14-99	Stop Sign
Route 25 @ Route 202 (West)	Tue, 10-19-99	Stop Sign
Route 25 @ New Portland Rd.	Wed, 10-20-99	Traffic Signal
Route 25 @ Route 114 (Downtown)	Thu, 10-21-99	Traffic Signal
Route 25 @ Route 202 (East)	Tue, 10-26-99	Stop Sign
Route 202 @ Cressey Rd.	Tue, 10-26-99	Stop Sign
Flaggy Meadow Rd. @ Cressey Rd.	Wed, 10-27-99	Stop Sign
New Portland Rd. @ Brackett Rd.	Thu, 10-28-99	Stop Sign
Route 114 @ Day Rd.	Thu, 10-28-99	Stop Sign

The raw turning movement data was summarized and converted to design hour volumes as follows:

1. Peak-hour traffic volumes and the peak-hour factor (ratio of the highest 15 minute period to the total hourly volume) were determined for each intersection from the peak period turning movement counts. These volumes were based on 15-minute counts; therefore, the peak hour could begin at 0, 15, 30, or 45 minutes past the top of the hour.
2. The peak-hour volumes were adjusted upward by multiplying by 1.03. This conversion was based on Automatic Traffic Recorder (ATR) data which indicated that October traffic volumes in the Gorham region are about 3% lower than peak volumes. This adjustment factor converted the October volumes to "design hour" volumes.
3. The adjusted turning movement volumes were also used to calculate peak-hour link volumes for each leg of the intersection.

Figures 2-2 thru 2-11, pages 2-4 through 2-8 illustrate the AM and PM peak hour volumes at the 10 intersections previously noted above. Corresponding peak hour times for each intersection are also noted. Each figure is oriented with north at the top of the page.

Figure 2-2 - Route 25 @ New Portland Rd.

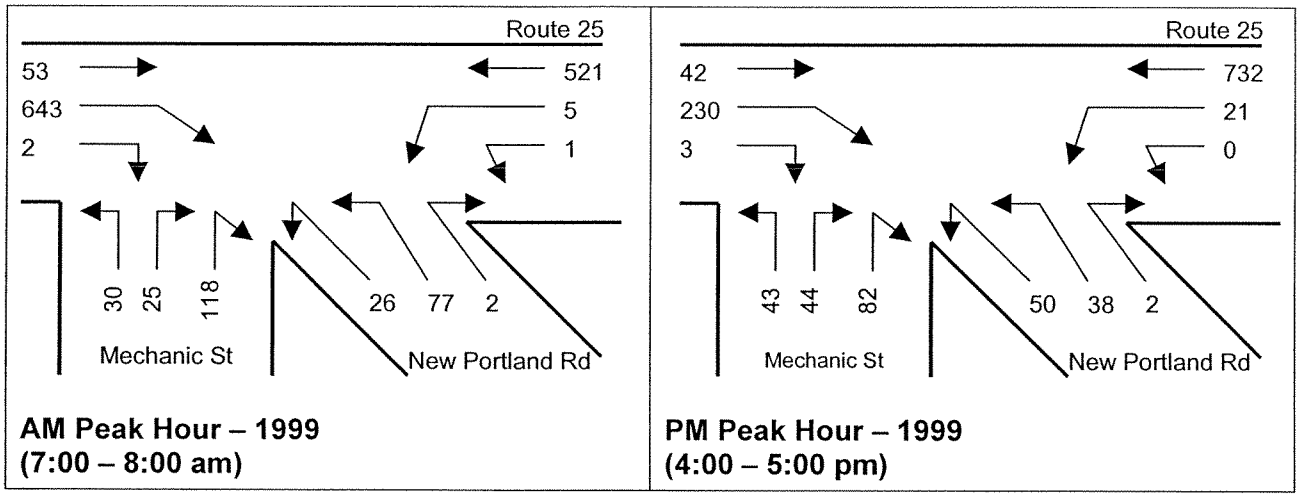


Figure 2-3: Route 25 @ Route 114

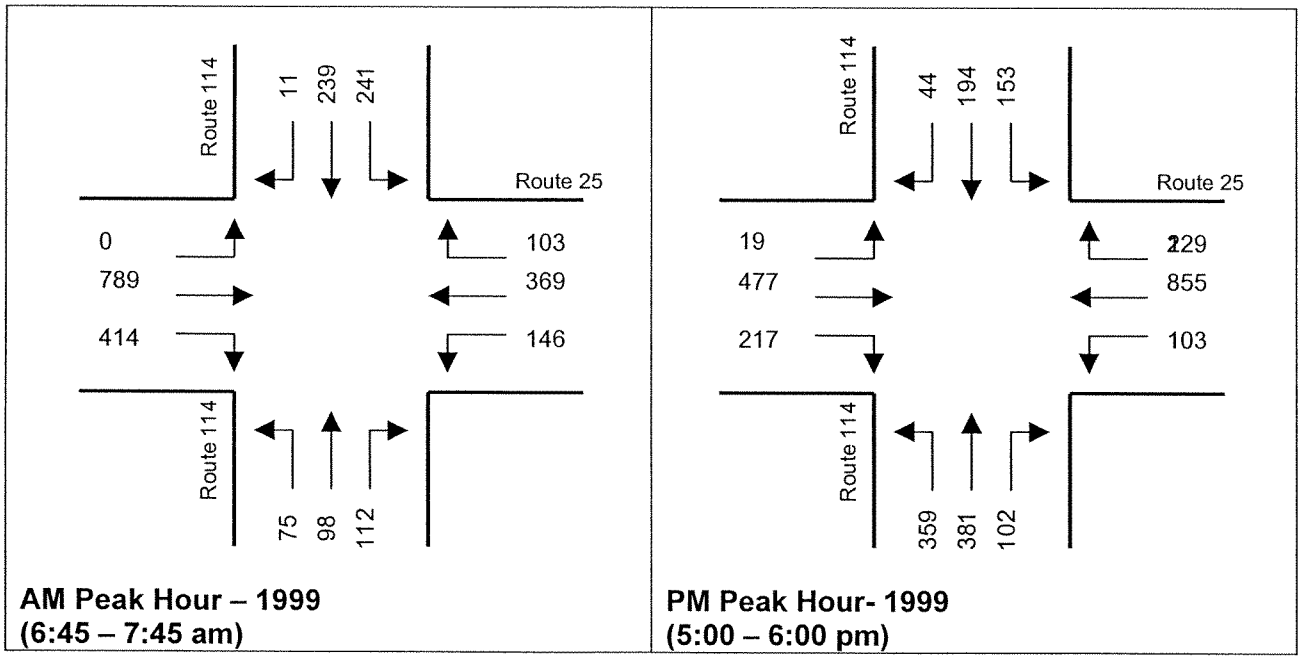
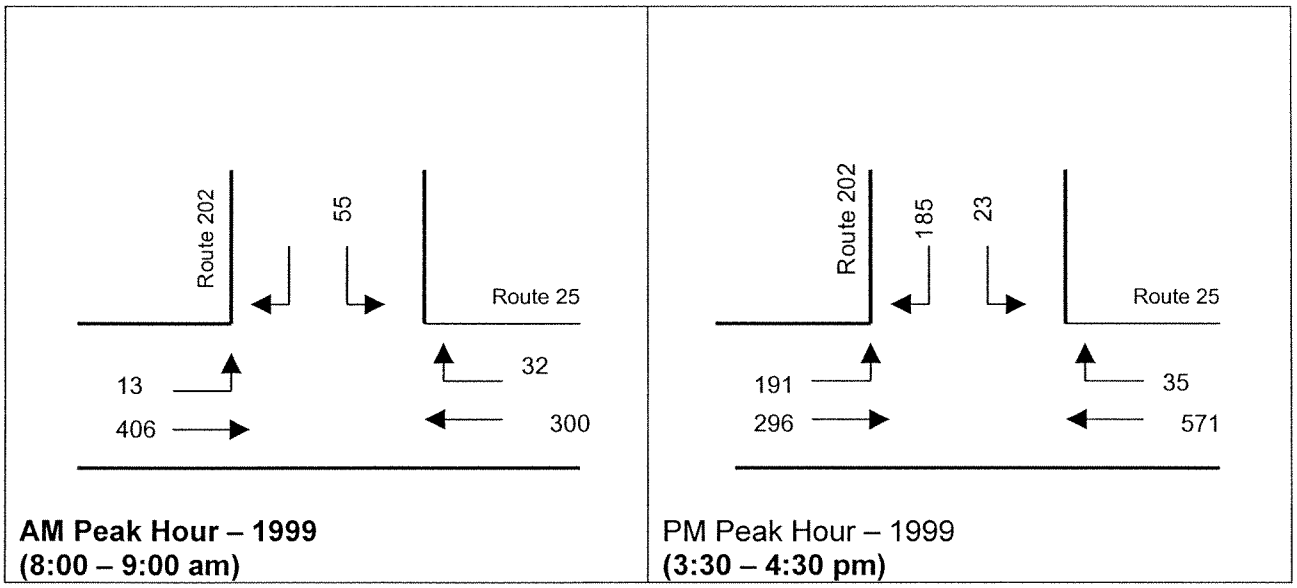


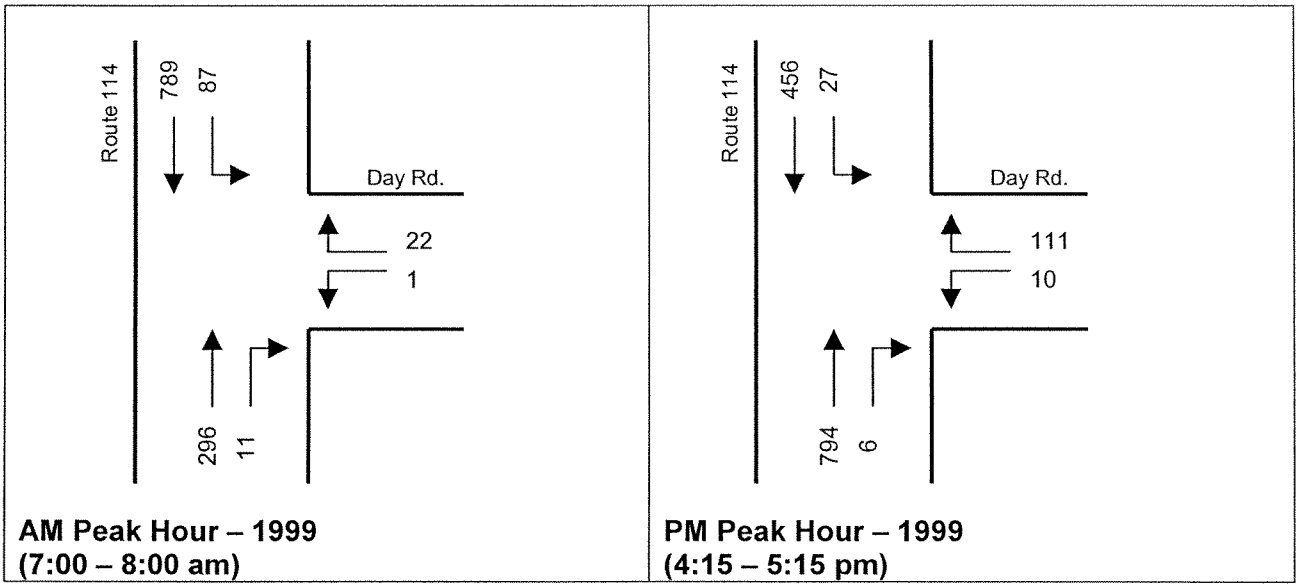
Figure 2-4 - Route 25 @ Route 202 (East)



AM Peak Hour – 1999
(8:00 – 9:00 am)

PM Peak Hour – 1999
(3:30 – 4:30 pm)

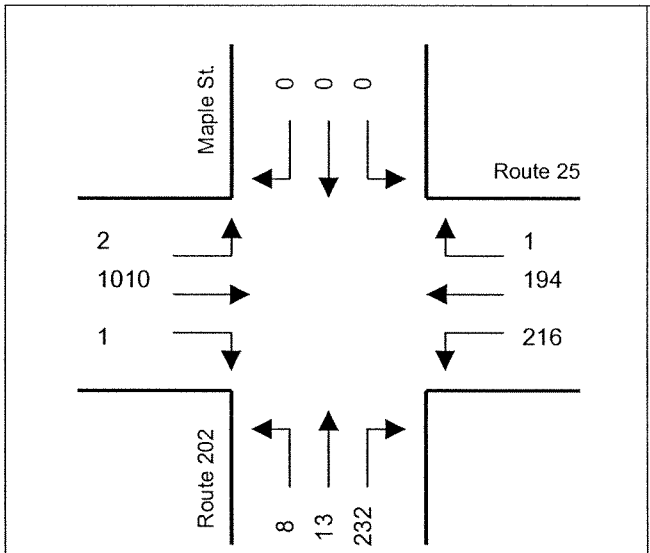
Figure 2-5 - Route 114 @ Day Rd.



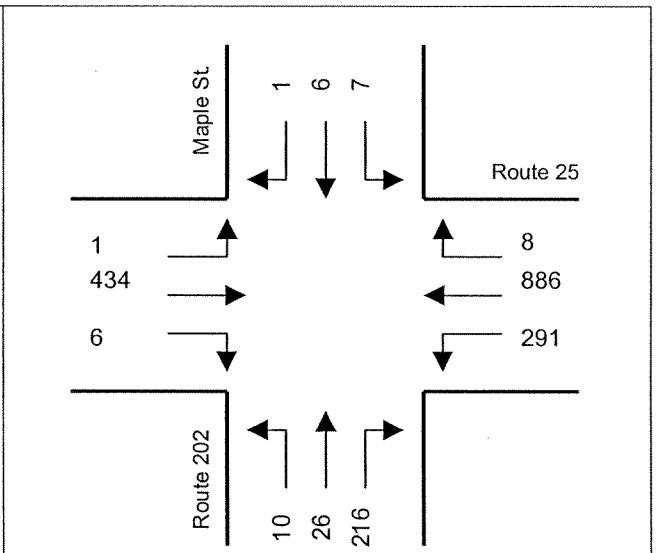
AM Peak Hour – 1999
(7:00 – 8:00 am)

PM Peak Hour – 1999
(4:15 – 5:15 pm)

Figure 2-6 - Route 25 @ Route 202 (West)

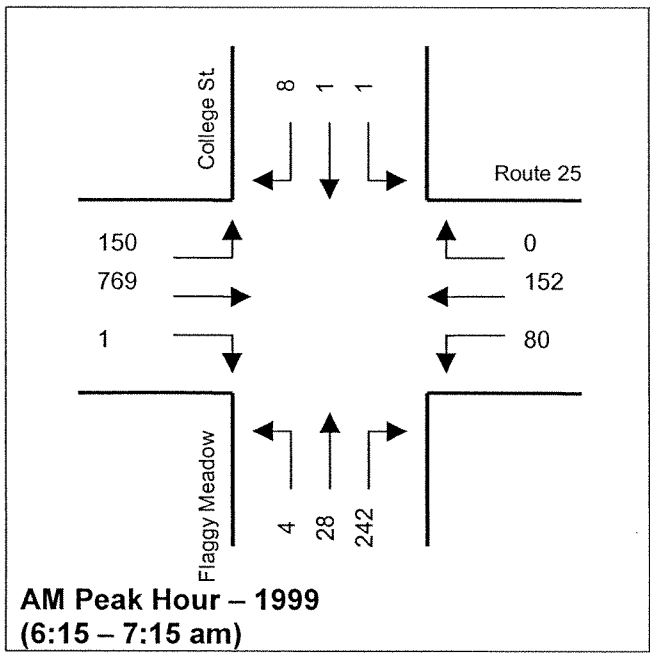


AM Peak Hour – 1999
(6:15 – 7:15 am)

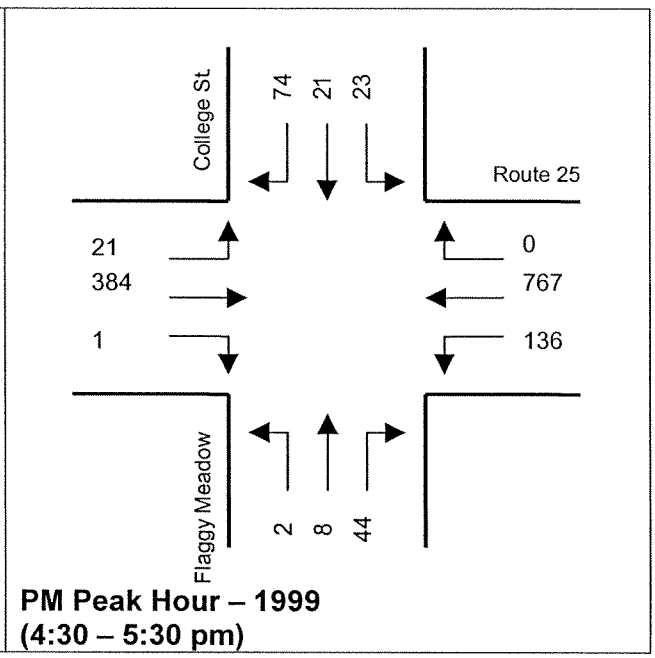


PM Peak Hour – 1999
(3:30 – 4:30 pm)

Figure 2-7 - Route 25 @ Flaggy Meadow Rd.



AM Peak Hour – 1999
(6:15 – 7:15 am)



PM Peak Hour – 1999
(4:30 – 5:30 pm)

Figure 2-8 – Route 25 @ Cressey Rd.

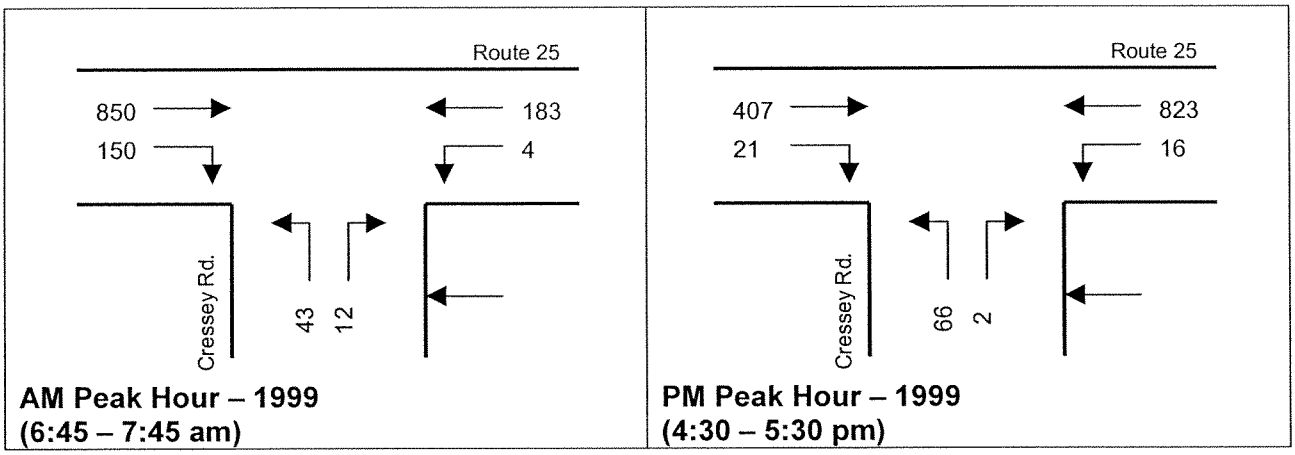


Figure 2-9: Cressey Rd. @ Flaggy Meadow Rd.

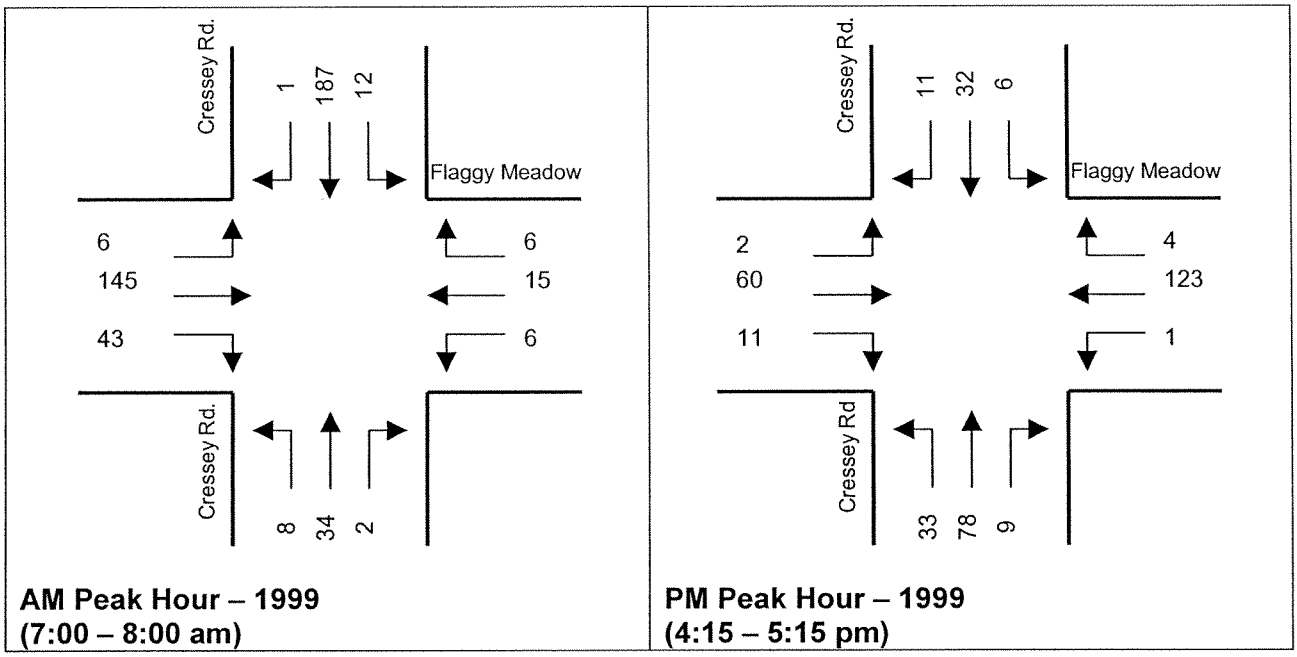


Figure 2 -10: Route 202 @ Cressey Rd.

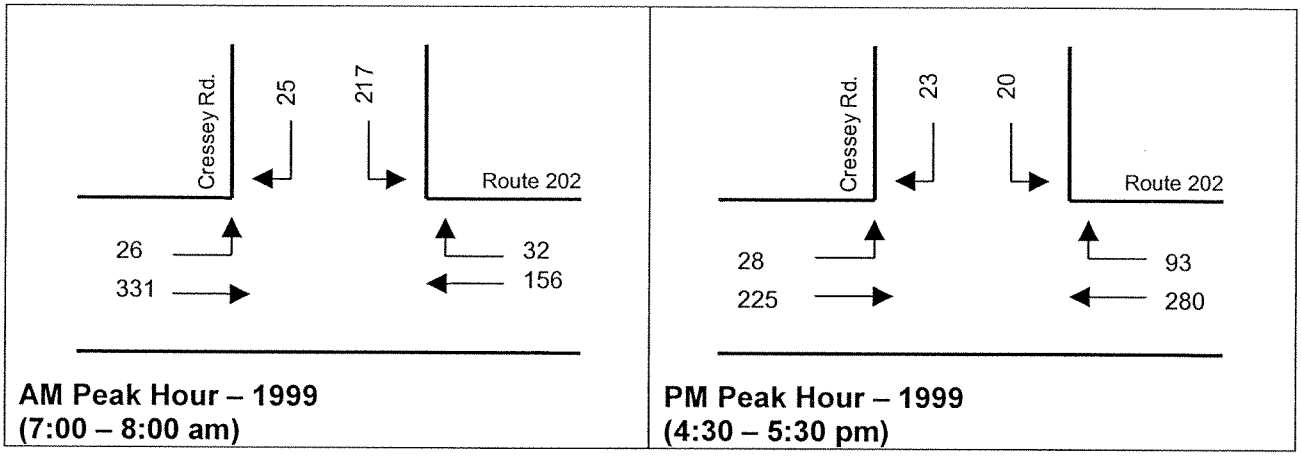
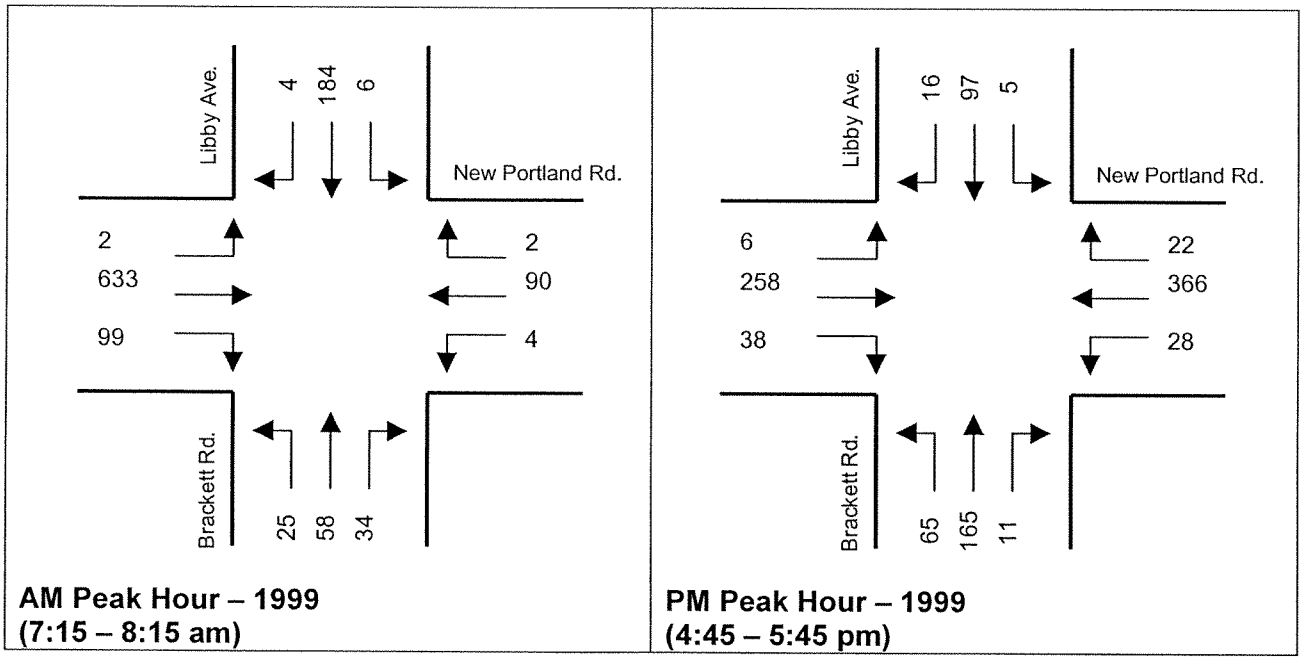


Figure 2-11: New Portland Rd. @ Brackett Rd. / Libby Ave.



2.1.2 Automatic Traffic Recorder (ATR) Counts

In order to document traffic conditions throughout the day, ATR counts were conducted on major road segments in the Study Area.

Table 2-2 summarizes the dates and locations of the ATR counts. Each ATR recorded data over a 3-day period, with at least two of these being weekdays. The ATR output summarizes the hourly volumes of traffic traveling on each link throughout the 3-day period, by direction and by vehicle class.

Table 2-2: Locations and Dates of ATR Counts

Link	Location	Dir	Start	Finish
Route 22	W. of western 22/114 split	EB	Sun, 31-Oct-99	Wed, 3-Nov-99
		WB	Sun, 31-Oct-99	Wed, 3-Nov-99
	E. of eastern 22/114 split	EB	Sun, 31-Oct-99	Wed, 3-Nov-99
		WB	Sun, 31-Oct-99	Wed, 3-Nov-99
	Gorham/Standish T.L.	EB	Sun, 17-Oct-99	Wed, 20-Oct-99
		WB	Sun, 17-Oct-99	Wed, 20-Oct-99
	W. of Cressey Rd.	EB	Sun, 17-Oct-99	Wed, 20-Oct-99
		WB	Wed, 3-Nov-99	Sat, 6-Nov-99
	E. of Cressey Rd.	EB	Sun, 17-Oct-99	Wed, 20-Oct-99
		WB	Wed, 3-Nov-99	Sat, 6-Nov-99
	W. of 202@25 (West)	EB	Sun, 21-Nov-99	Wed, 24-Nov-99
		WB	Sun, 21-Nov-99	Wed, 24-Nov-99
Route 25	E. of 25@202 (East)	EB	Sun, 7-Nov-99	Wed, 10-Nov-99
		WB	Sun, 24-Oct-99	Wed, 27-Oct-99
	W. of Libby	EB	Sun, 21-Nov-99	Wed, 24-Nov-99
		WB	Sun, 21-Nov-99	Wed, 24-Nov-99
	E. of Libby	EB	Mon, 29-Nov-99	Thu, 2-Dec-99
		WB	Mon, 29-Nov-99	Thu, 2-Dec-99
	W. of Conant St.	EB	Sun, 7-Nov-99	Wed, 10-Nov-99
		WB	Sun, 7-Nov-99	Wed, 10-Nov-99
	S. of eastern 22/114 split	NB	Wed, 3-Nov-99	Sat, 6-Nov-99
		SB	Sun, 31-Oct-99	Wed, 3-Nov-99
	S. of Day Rd.	NB	Sun, 31-Oct-99	Wed, 3-Nov-99
		SB	Sun, 31-Oct-99	Wed, 3-Nov-99
Route 114	N. of Day Rd.	NB	Wed, 27-Oct-99	Sat, 30-Oct-99
		SB	Sun, 31-Oct-99	Wed, 3-Nov-99
	S. of Downtown	NB	Wed, 20-Oct-99	Sat, 23-Oct-99
		SB	Sun, 31-Oct-99	Wed, 3-Nov-99
	N. of Downtown	NB	Wed, 3-Nov-99	Sat, 6-Nov-99
		SB	Wed, 3-Nov-99	Sat, 6-Nov-99
	Gorham/Standish T.L.	NB	Wed, 3-Nov-99	Sat, 6-Nov-99
		SB	Wed, 3-Nov-99	Sat, 6-Nov-99
Route 202	N. of Cousins Rd.	NB	Sun, 7-Nov-99	Wed, 10-Nov-99
		SB	Sun, 7-Nov-99	Wed, 10-Nov-99
	S. of Cressey Rd.	NB	Wed, 3-Nov-99	Sat, 6-Nov-99
		SB	Wed, 13-Oct-99	Sat, 16-Oct-99
	N. of Cressey Rd.	NB	Wed, 3-Nov-99	Sat, 6-Nov-99
		SB	Wed, 13-Oct-99	Sat, 16-Oct-99
	W. of 25@202 (West)	EB	Mon, 22-Nov-99	Thu, 25-Nov-99
		WB	Mon, 22-Nov-99	Thu, 25-Nov-99
	N. of 25@202 (East)	NB	Sun, 24-Oct-99	Wed, 27-Oct-99
		SB	Sun, 24-Oct-99	Wed, 27-Oct-99
	N. of Libby	NB	Sun, 24-Oct-99	Wed, 27-Oct-99
		SB	Sun, 24-Oct-99	Wed, 27-Oct-99
	E. of Morse Meadows	EB	Mon, 29-Nov -99	Thu,2-Dec-99
			Mon, 29-Nov -99	Thu,2-Dec-99
Route 22 / 114	E. of western 22/114 split	EB	Wed, 8-Dec-99	Sat, 11-Dec-99
		WB	Wed, 8-Dec-99	Sat, 11-Dec-99
Route 25 / 202	W. of Flaggy Meadow	EB	Sun, 21-Nov-99	Wed, 24-Nov-99
		WB	Sun, 21-Nov-99	Wed, 24-Nov-99
	W. of Downtown	EB	Wed, 3-Nov-99	Sat, 6-Nov-99
		WB	Wed, 3-Nov-99	Sat, 6-Nov-99

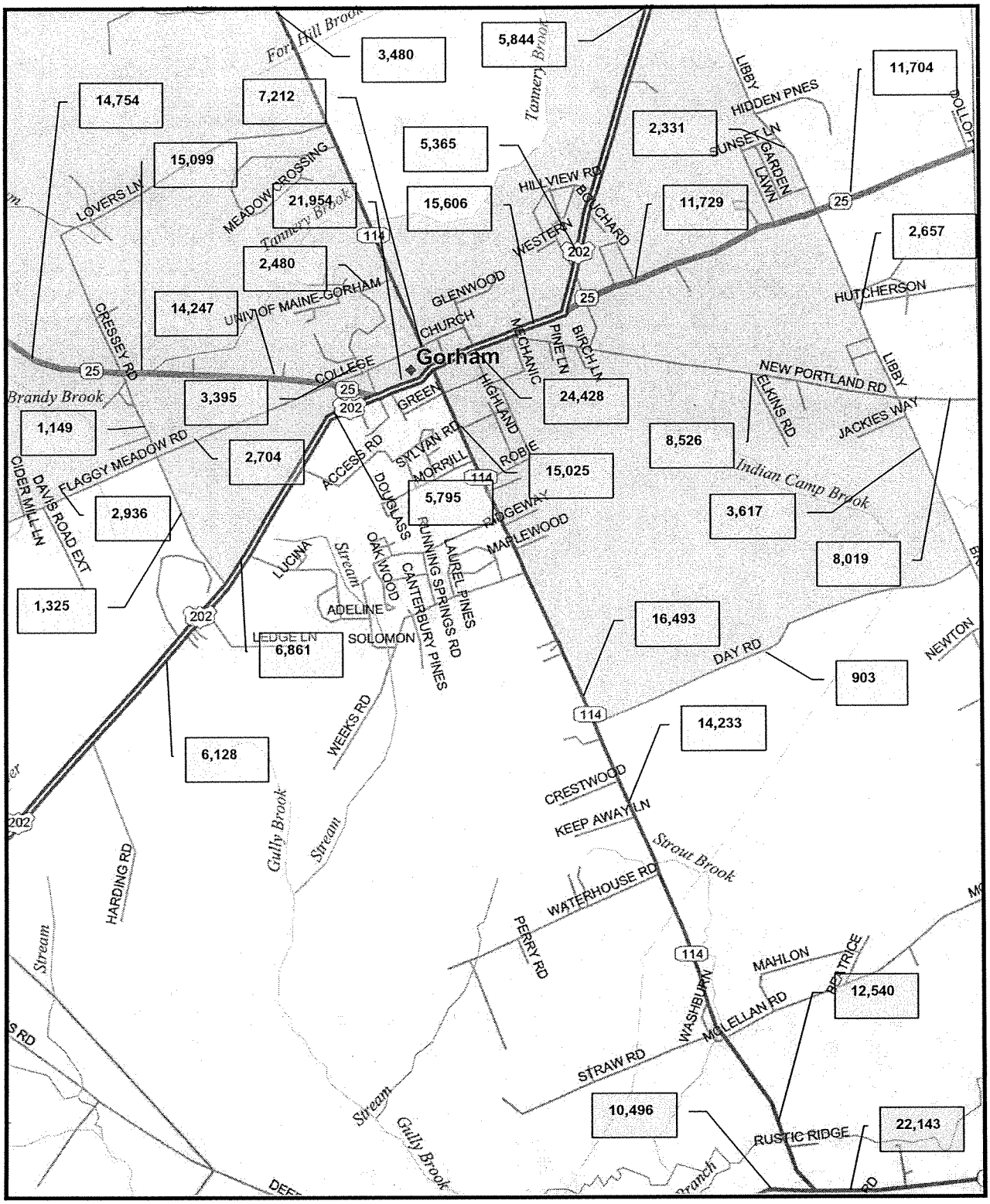
Table 2-2: Locations and Dates of ATR Counts (cont.)

Link	Location	Dir	Start	Finish
Route 22/114 (cont.)	E. of Downtown	EB	Sun, 24-Oct-99	Wed, 27-Oct-99
		WB	Sun, 24-Oct-99	Wed, 27-Oct-99
	W. of New Portland Rd.	EB	Sun, 21-Nov-99	Wed, 24-Nov-99
		WB	Mon, 29-Nov-99	Thu, 2-Dec-99
	E. of New Portland Rd.	EB	Sun, 24-Oct-99	Wed, 27-Oct-99
		WB	Sun, 24-Oct-99	Wed, 27-Oct-99
Brackett Rd.	S. of New Portland Rd.	NB	Sun, 24-Oct-99	Wed, 27-Oct-99
		SB	Sun, 24-Oct-99	Wed, 27-Oct-99
Cressey Rd.	N. of 202	NB	Wed, 20-Oct-99	Sat, 23-Oct-99
		SB	Wed, 20-Oct-99	Sat, 23-Oct-99
	N. of Flaggy Meadow	NB	Wed, 20-Oct-99	Sat, 23-Oct-99
		SB	Wed, 20-Oct-99	Sat, 23-Oct-99
Day Rd.	E. of 114	EB	Wed, 27-Oct-99	Sat, 30-Oct-99
		WB	Wed, 27-Oct-99	Sat, 30-Oct-99
Flaggy Meadow Rd.	W. of Cressey Rd.	EB	Sun, 17-Oct-99	Sat, 16-Oct-99
		WB	Sun, 17-Oct-99	Sat, 16-Oct-99
	E. of Cressey Rd.	EB	Wed, 13-Oct-99	Sat, 16-Oct-99
		WB	Wed, 13-Oct-99	Sat, 16-Oct-99
Libby Rd.	N. of New Portland Rd.	NB	Wed, 27-Oct-99	Sat, 30-Oct-99
		SB	Wed, 27-Oct-99	Sat, 30-Oct-99
	N. of Route 25	NB	Sun, 28-Nov-99	Wed, 1-Dec-99
		SB	Sun, 28-Nov-99	Wed, 1-Dec-99
New Portland Rd.	E. of Libby	EB	Wed, 27-Oct-99	Sat, 30-Oct-99
		WB	Wed, 27-Oct-99	Sat, 30-Oct-99
	W. of Libby / Brackett	EB	Wed, 27-Oct-99	Sat, 30-Oct-99
		WB	Wed, 27-Oct-99	Sat, 30-Oct-99
USM Entry	Off 114	EB	Mon, 29-Nov-99	Thu, 2-Dec-99
		WB	Mon, 29-Nov-99	Thu, 2-Dec-99
	Off College Ave.	NB	Mon, 22-Nov-99	Thu, 25-Nov-99
		SB	Mon, 22-Nov-99	Thu, 25-Nov-99

The ATR data was summarized as follows:

1. The hourly data for all weekdays was summarized and averaged to produce a set of "average hourly weekday" volumes.
2. The ATR volumes were compared to the "hourly traffic volumes" documented by the turning movement counts (when available) to reconcile normal differences in data obtained by the two methods. Adjustments were made to the volumes using standard traffic engineering methodologies when necessary.
3. The ATR and turning movement data was combined and averaged at each location in order to create a set of "average weekday" volumes.
4. The "average weekday" volumes were multiplied by 1.03 to create a set of "design weekday" volumes. This conversion was based on Automatic Traffic Recorder (ATR) data provided by MDOT, which indicate that October traffic volumes in the Gorham region are about 3% lower than August volumes. Since overall traffic in the Gorham region is at its peak in August, this adjustment factor effectively converts the October volumes to "design hour" volumes.
5. The directional "design weekday" volumes for each link were totaled to create two-way "Average Daily Traffic" (ADT) volumes. Figure 2-12, page 2-11 illustrates the ADT volumes for selected links in the Gorham region.

Figure 2-12 - 1999 Two-Way Average Daily Traffic for Selected Links in Study Area



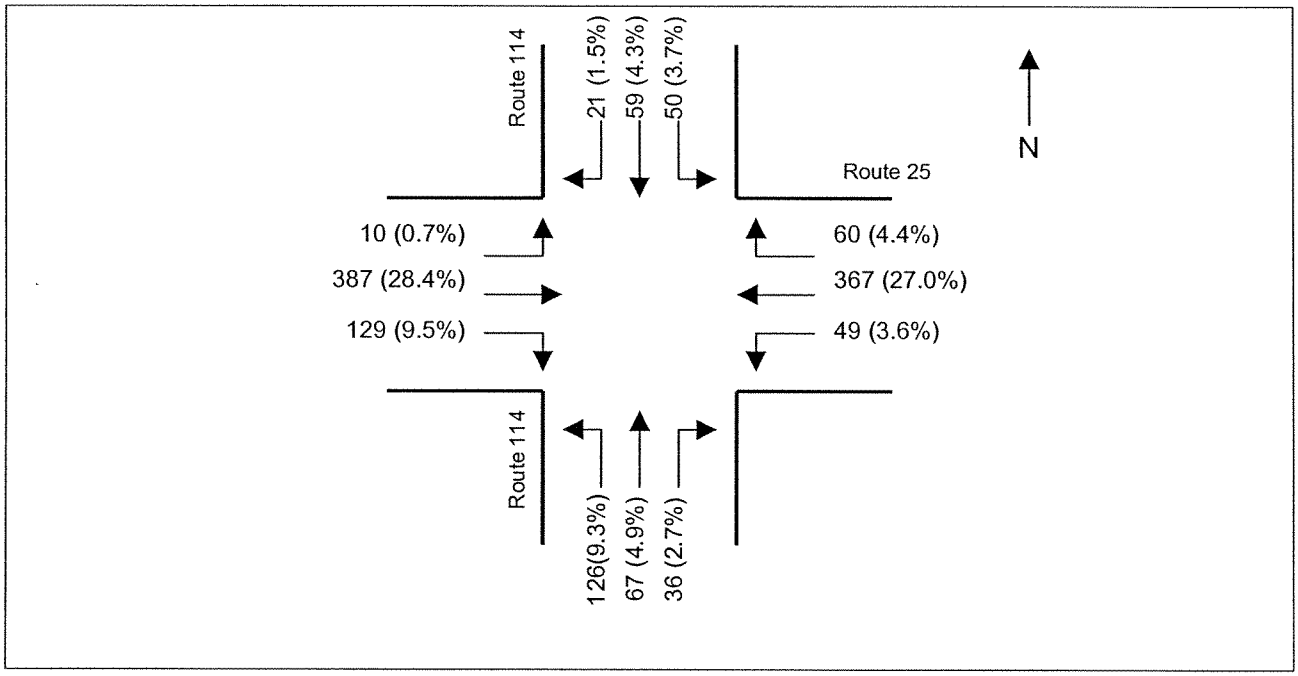
2.1.3 Truck Data

Twelve-hour turning movement truck counts were conducted at the intersection of Routes 114 & 25 in Gorham Village. Trucks are defined as any vehicle having two or more axles with six or more tires. These counts, conducted on January 12, 2000, had three primary purposes:

I. To identify the primary truck movements through the Study Area;
II. To identify the peak hours during which trucks traveled through the Study Area; and
III. To identify the types of trucks which most frequently traveled through the Study Area (i.e. buses, construction vehicles, delivery vehicles, etc.).

Figure 2-13 summarizes the results of the 12-hour truck turning movement counts. The number in parentheses represents the percentage of total trucks passing through the intersection that made each particular turning movement.

Figure 2-13: 12-Hour Truck Turning Movement Volumes & Percentages, Route 25 @ Route 114, January 2000



The two dominant truck routes through downtown Gorham are:

- Trucks moving in an east-west direction through Gorham Village on Route 25 (55%);
- Trucks moving between Route 25 west of downtown and Route 114 south of the Village (19%);

Remaining movements ranged between 2-10% of the total truck volume.

Truck traffic generally has a different peak hour pattern than does general traffic. The morning peak for trucks was between 7:45-8:45 am, compared to 6:45-7:45 am for all vehicles. Similarly, the evening peak for trucks was 3:15-4:15 pm, compared to 5:00-6:00 pm for all vehicles. This is not unusual as commercial truck traffic generally operates outside of the morning and evening rush hour periods.

2.1.4 Crash Data

MDOT's Traffic Engineering Division summarizes all reported crashes in which there is property damage in excess of $500, or in which there has been personal injury. In order to summarize this information, the MDOT has established a Node and Link System. This system assigns a four-digit node number to each intersection, major bridge, railroad crossing, and crossing of town, county or urban compact lines. The segments of road that connect the nodes are referred to as links. As crash reports are received by MDOT, the information is assigned to the corresponding link or node at which they occurred.

If a particular link or node meets certain criteria, then the MDOT classifies it as a high-crash location (HCL)[1]. These criteria are:

The link or node must have 8 or more reported crashes over the past 3 years, and the link or node must have a "critical rate factor" (CRF) over 1.00. (The critical rate factor relates the crash rate at a particular link or node to the statewide crash rate average for a similar type of facility).

Crash data for key links and nodes in the Study Area were obtained and reviewed for the most recent three-year period for which data was available (1996-1998). Table 2-3, below, summarizes crash data for each of the 10 intersections at which turning movement counts were performed. It also includes other intersections within the Study Area that have been classified as high-crash locations.

Table 2-3 – Crash Data for Selected Intersections in the Study Area

Node (Intersection) Name	Total # of Crashes (1996-1998)	Critical Rate Factor (CRF)	High Crash Location (Y/N)
Route 25 at Cressey Rd.	2	0.33	NO
Flaggy Meadow Rd. at Cressey Rd.	3	1.14	NO
Route 4/202 at Cressey Rd.	3	0.73	NO
Route 25 at Flaggy Meadow Rd.	19	2.47	YES
Route 25 at Route 4/202 (West)	10	0.92	NO
Route 114 at Routes 4/25/202 (Downtown)	47	1.01	YES
Route 25 at New Portland Rd.	12	0.35	NO
Route 25 at Route 4/202 (East)	4	0.41	NO
New Portland Rd. at Brackett Rd.	29	6.70	YES
Route 114 at Day Rd.	4	0.70	NO

[1] Formerly identified as High Accident Locations (HAL's)

Table 2-3 – Crash Data for Selected Intersections in the Study Area (continued)

Node (Intersection) Name	Total # of Crashes (1996-1998)	Critical Rate Factor (CRF)	High Crash Location (Y/N)
Routes 4/25/202 at Cross Street	21	1.81	YES
Routes 4/25/202 at Water Street	14	1.13	YES
Route 25 at Libby Avenue	11	1.57	YES
Route 25 at Mosher Road	10	1.08	YES
Route 114 at Green Street	21	2.52	YES
Route 114 at Morrill Avenue	8	1.04	YES
Route 114 at Washburn/McLellen	9	1.16	YES
Route 22 at Burnham Road	17	1.71	YES

Table 2-4 documents all links in the Study Area that have been classified as HCL's.

Table 2-4 – Crash Data for Selected Links in the Study Area

Link (Road Segment) Name	Total # of Crashes (1996-1998)	Critical Rate Factor (CRF)	High Crash Location (Y/N)
Routes 4/25/202 (Pine Street to Route 114)	20	1.45	YES
Routes 4/25/202 (Route 114 to Cross St.)	11	2.02	YES
Routes 4/25/202 (Cross Street to Water St.)	19	1.62	YES
Routes 4/25/202 (Water St. to New Portland Rd.)	20	1.74	YES
Route 114 (Routes 4/25/202 to Preble Street)	26	3.76	YES

2.1.5 Geometric Deficiencies

Geometric deficiencies currently exist at the intersection of Route 25 and Route 114. Inadequate curve radii and narrow lane widths have been identified on the west and south legs of the intersections.

2.2 Travel Desires

The traffic flows at each intersection were used to calibrate the Portland Area Comprehensive Transportation Committee (PACTS) travel demand model. This information, coupled with origin/destination information collected by PACTS (1995 survey) in the Gorham region, was summarized and quantifies the major travel desires of traffic moving through the Study Area. These travel desires are shown on Figures 2-14 through 2-17, pages 2-15 through 2-18.

FIGURE 2-14: Travel Desires From Route 114 North

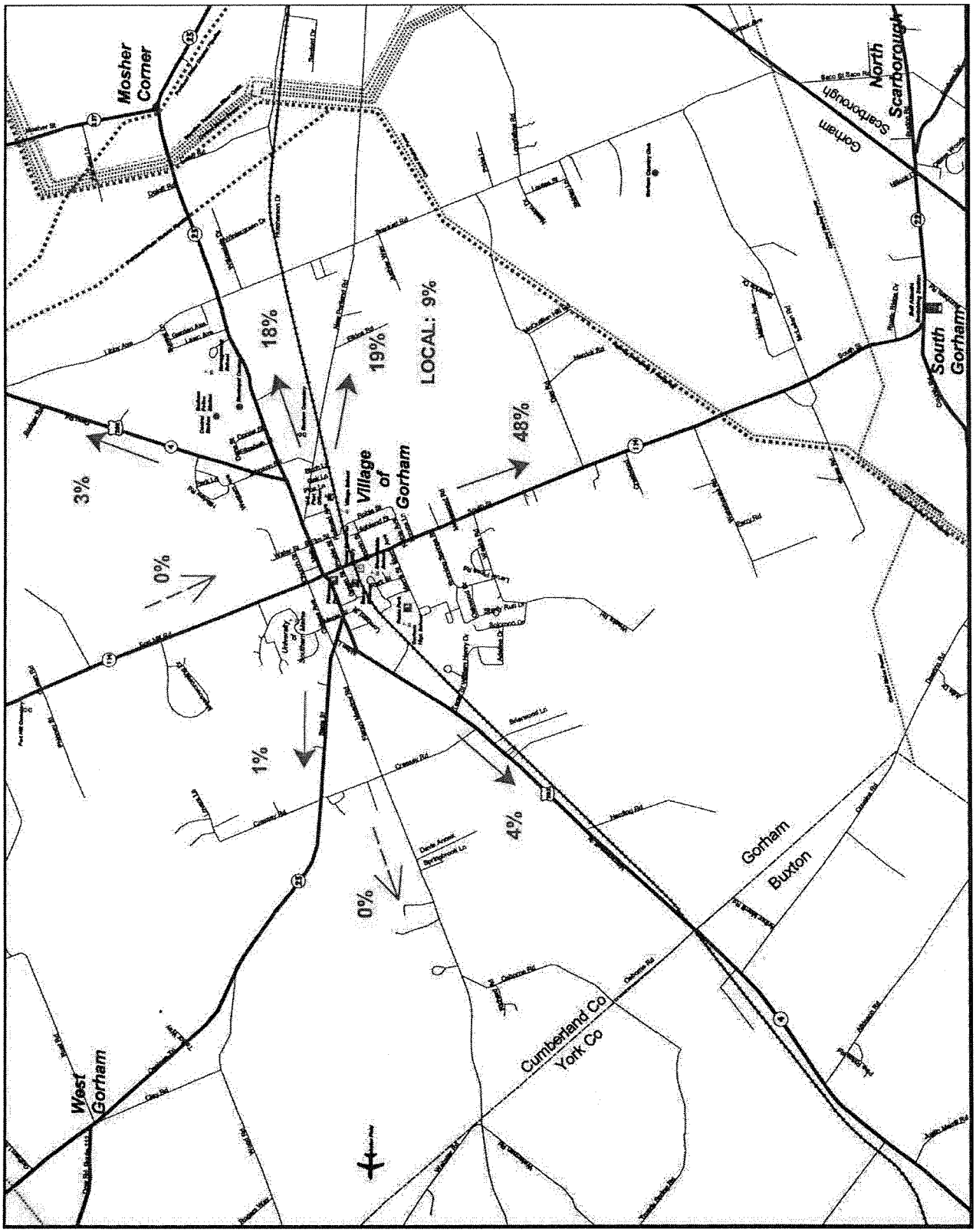


Figure 2-15: Travel Desires From Routes 25/202 and New Portland Road East

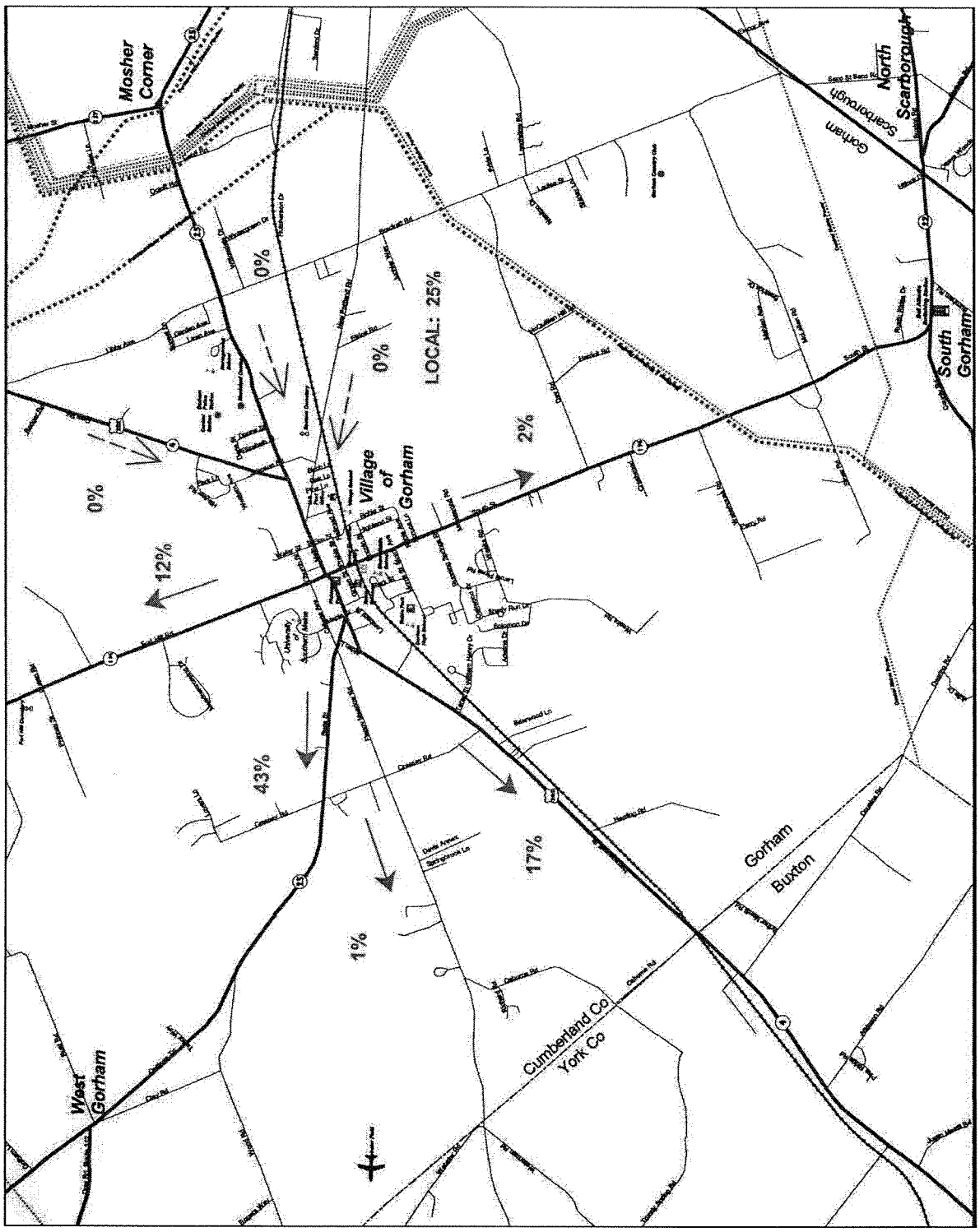


Figure 2-16: -Travel Desires From Route 114 South

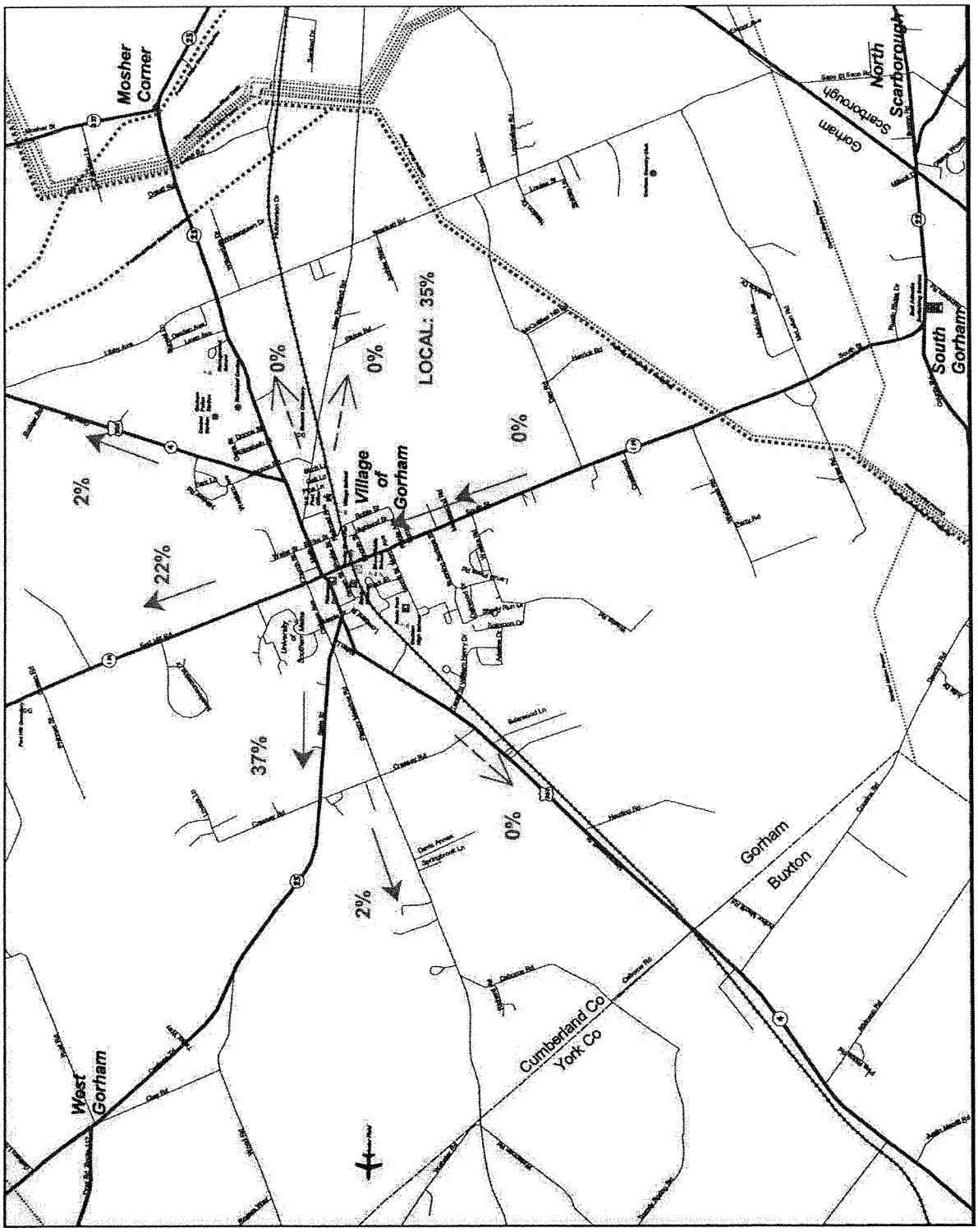
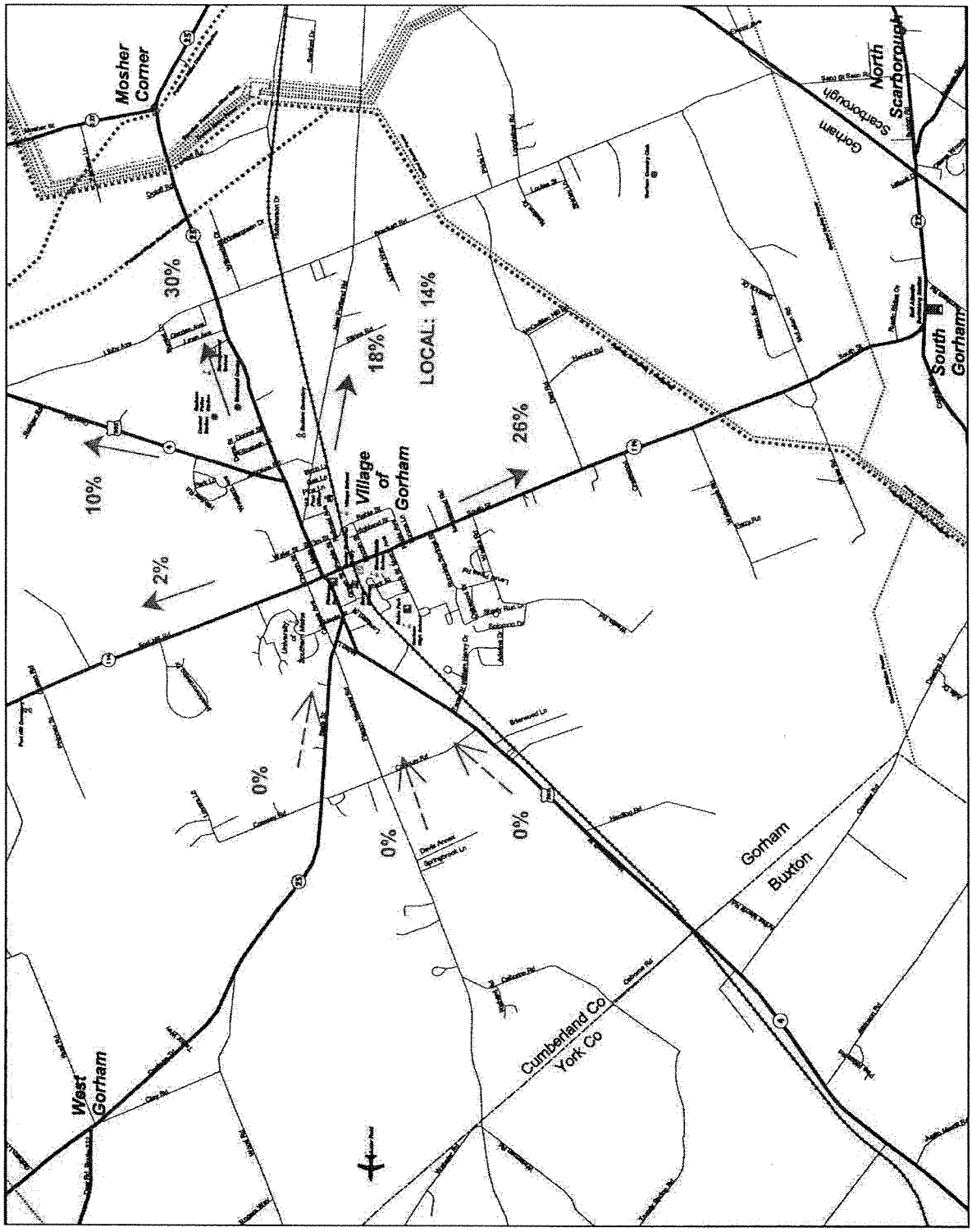


Figure 2-17: Travel Desires From Route 25/202 and Flaggy Meadow West



The travel desires illustrate several important points which have a bearing on the potential location and effectiveness of a bypass route.

- Almost 25% of traffic entering Gorham Village is local in nature. Overall, nearly 1 in 4 vehicles entering the Village has a destination within the village itself.
- Most traffic (58%) approaching Gorham Village from the west is through traffic that continues eastward on either Rte. 25, New Portland Rd., or Rte. 202.
- Similarly, most traffic (61%) approaching Gorham Village from the east is through traffic that continues westward on either Rte. 25, Rte. 202, or Flaggy Meadow Rd.
- The predominant movement is between Rte. 25 east of Gorham Village and Rte. 25 west of Gorham Village
- The second highest traveled movement is between Route 114 south of Gorham Village and Route 25 west of Gorham Village.
- A very small percentage of vehicles travel between the north side of Gorham Village and the west side of Gorham Village (between 1% and 2%). Similarly, a very small percentage of vehicles travel between the south side of Gorham Village and the east side of Gorham Village (between <1% and 2%).

2.3 Operational Analysis

This section describes the methodologies and results of the operational analysis of Study Area roads under existing (1999) traffic conditions. The procedures employed in this analysis are those specified in the 1994 (updated 1997) Highway Capacity Manual (HCM) ,Transportation Research Board Special Report 209. The traffic analysis is separated into three functional groups: road segments, unsignalized intersections, and signalized intersections. All functional groups were analyzed with the Highway Capacity Software (HCS), a computer program that applies the procedures of the HCM.

Standard traffic engineering practice categorizes traffic flow operating characteristics in terms of a parameter known as Level of Service (LOS). LOS is a quantitative measure of the quality of traffic flow experienced by the motorist. Operating characteristics of roads can be compared from one alternative to another by this LOS concept. The composite effects of speed, traffic interruption, safety, comfort, freedom to maneuver, and convenience define LOS. Six levels of service, expressed by letter designations from A to F, are defined for each type of highway facility.

Although specific characteristics of flow vary by the type of facility in question, LOS A generally represents free-flow conditions where the quality of flow experienced by the motorist is excellent. LOS F defines forced or breakdown flow where the quality of flow experienced by the motorist is poor, drivers are faced with prolonged stop-and-go conditions, and blockages occur, often preventing traffic movement on cross streets. The practical traffic-carrying capacity of a facility is approached and attained at LOS E. Operations at this level are usually unstable because small increases in flow, minor lane changing, vehicle breakdowns or merging maneuvers will cause a breakdown in operation.

For each type of facility, the HCM defines LOS based on one or more operational parameters which best describe the operating quality on the subject facility type during

the identified design condition, typically one or two peak hours of an average day. The parameters selected in the HCM to define LOS for each facility type are called "measures of effectiveness," and represent those available measures that best describe the quality of operation on the subject facility type. Each LOS represents a range of conditions, as defined by a range of parameters. Thus, a LOS is not a discrete qualitative condition, but rather a range of conditions for which boundaries have been established.

2.3.1 Signalized Intersections

A signalized intersection is one of the most complex locations in the traffic system. To understand the operation of a signalized intersection, it is important to understand the two parameters that are paramount to this operation: capacity and level of service (LOS).

Capacity at a signalized intersection is defined for each approach. Intersection approach capacity is the maximum rate of flow which can pass through the intersection as a function of given traffic volumes, road geometry, and signalization parameters. It is expressed in terms of a v/c ratio, which relates the traffic *volume* at each approach to the actual *capacity* of this approach. The v/c ratios may vary between 0 (no traffic on the approach) and 1.00 (traffic flow equals capacity). If the v/c ratio exceeds 1.00, the approach demand volume is greater than capacity and not all of the demand can be serviced during a given period of time. Accordingly, residual queues build up on the approach and additional time is required to process traffic through the intersection. The peak period extends to a duration longer than would be expected under uncongested conditions.

LOS for signalized intersections is defined in terms of the average control delay per vehicle for various movements within the intersection. Control delay includes delays associated with slowing down, moving through the queue, stopping, and restarting. Delay is dependent on a number of variables, including the quality of traffic signal progression, signal cycle length, allocation of green time to a particular movement, and the v/c ratio for the approach under consideration. Levels of service range from LOS A to LOS F and are defined by the Highway Capacity Manual as follows:

LOS A occurs when traffic signal progression is extremely favorable, and most vehicles arrive at the intersection during the green phase. Most vehicles do not stop at all.

LOS B generally occurs with good progression and/or short cycle length. More vehicles have to stop.

LOS C results from fair progression and/or longer cycle lengths. Individual cycle failures (v/c ratio of 1.00) may begin to appear. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.

At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E is considered to be the theoretical capacity of a road/intersection. High delay values result indicating poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

LOS F is considered to be a forced-flow, congested condition. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Table 2-5: LOS Criteria for Signalized Intersections

Level of Service	Measure of Effectiveness (signalized)
	Average Delay (seconds)
A	<= 10
B	>10 & <=20
C	>20 & <=35
D	>35 & <=55
E	>55 & <=80
F	>80

The criteria for equating average vehicle delay to LOS is given in Table 2-5. Each movement within an intersection will have an LOS rating (e.g. "the northbound left-turn movement operates at LOS B"), and the intersection as a whole will have an LOS rating (e.g. "the intersection of Routes 114 and 25 operates at LOS D"). The intersection LOS is essentially a weighted average of the individual movements' levels of service.

Typically, LOS C is considered a design standard by the Americal Association of State Highway and Transportation Officials (AASHTO). This may not be practical on existing urban streets, where physical obstructions and right-of-way limitations do not allow for sufficient geometry. AASHTO and other agencies for design consider LOS D acceptable standard in many urban conditions. Furthermore, if a highway facility operates at LOS D during the peak hours, it is likely that it operates at LOS C or better for most of the day.

The relationship between the intersection capacity and the delay is very complex. For example, it is possible to have delays in the range of LOS F while the v/c ratio is below 1.00. This situation would mean that while there is enough capacity to service the demand, unacceptably long delays still occur due to long cycle lengths, poor signal progression, or allocation of insufficient amount of green time to a particular movement. The reverse is also possible: an approach with demand volumes equal to the approach capacity (v/c = 1.00) may have acceptable delays due to short cycle length or a favorable signal progression for a particular movement. Thus, both capacity and LOS have to be analyzed to fully evaluate the operation of a signalized intersection.

Table 2-6, page 2-22 summarizes the existing conditions analysis for the two signalized intersections in the Study Area during the AM peak hour. Results of the signalized intersection analysis reflect conditions without actuation of the exclusive pedestrian phases.

Table 2-6: Signalized Intersections, 1999 AM Peak Hour

Intersection	Approach	Delay (sec)	LOS	V/C Ratio
Route 25 @ Route 114	Route 25 - EB-LT	233.7	F	1.31
	Route 25 - EB-R	30.7	C	0.75
	Route 25 - WB-L	45.1	D	0.82
	Route 25 - WB-T	15.9	B	0.51
	Route 25 - WB-R	12.4	B	0.18
	Route 114 - NB-L	19.0	B	0.29
	Route 114 - NB-TR	19.1	B	0.36
	Route 114 - SB-L	37.9	D	0.78
	Route 114 - SB-TR	21.4	C	0.50
	Intersection Avg.	**89.0**	**F**	**1.06**
Route 25 @ New Portland Road	Route 25 - EB-T	22.4	C	0.66
	Route 25 - EB-R	53.0	D	0.92
	Route 25 - WB-LT	23.1	C	0.67
	New Portland - NW-LTR	35.6	D	0.38
	Mechanic Street - NB-LTR	60.0	E	0.76
	Intersection Avg.	**35.6**	**D**	**0.77**

Legend

L -	Left Turn	LT -	Left/Thru
R -	Right Turn	RT -	Right/Thru
T -	Thru	LTR -	Left/Thru/Right

The intersection of Routes 25 and 114 operates poorly during the AM peak hour, with average vehicle delay of nearly 1.5 minutes. The greatest delay is experienced by eastbound through traffic, which faces an average delay of nearly four minutes per vehicle. Because this is the primary movement during the AM peak, its poor performance has a significant impact on the overall intersection LOS.

The intersection of Route 25 and New Portland Road operates at an acceptable level. The average intersection delay is just over 35 seconds, with only one movement at LOS E.

Table 2-7, page 2-23 summarizes the existing conditions analysis for the two signalized intersections during the PM peak hour. Results of the signalized intersection analysis reflect conditions without actuation of the exclusive pedestrian phases.

Table 2-7: Signalized Intersections, 1999 PM Peak Hour

Intersection	Approach	Delay (sec)	LOS	V/C Ratio
Route 25 @ Route 114	Route 25 - EB-LT	42.1	D	0.87
	Route 25 - EB-R	19.7	B	0.38
	Route 25 - WB-L	15.5	B	0.41
	Route 25 - WB-T	117.7	F	1.09
	Route 25 - WB-R	12.5	B	0.21
	Route 114 - NB-L	171.1	F	1.16
	Route 114 - NB-TR	30.7	C	0.78
	Route 114 - SB-L	111.7	F	0.96
	Route 114 - SB-TR	21.0	C	0.49
	Intersection Avg.	**75.2**	**E**	**1.12**
Route 25 @ New Portland Road	Route 25 - EB-T	20.0	C	0.58
	Route 25 - EB-R	17.5	B	0.34
	Route 25 - WB-LT	92.4	F	1.02
	New Portland - NW-LTR	352.0	F	1.64
	Mechanic Street - NB-LTR	63.9	E	0.81
	Intersection Avg.	**124.2**	**F**	**1.13**

Legend

L -	Left Turn	LT -	Left/Thru
R -	Right Turn	RT -	Right/Thru
T -	Thru	LTR -	Left/Thru/Right

The PM peak hour volumes put a strain on both intersections, with westbound vehicles facing substantial delays. Heavy volumes from New Portland Road converge with even heavier volumes from Route 25, resulting in LOS F conditions for all westbound traffic at the intersection of Route 25 and New Portland Road. These same westbound vehicles face another two minutes of delay when they reach the intersection of Route 25 and Route 114.

2.3.2 Unsignalized Intersections

The unsignalized intersection analysis includes evaluation of the following movements:

- Left turn from minor street
- Right turn from minor street
- Left turn from major street

The level of service for an unsignalized intersection is determined by the computed or measured control delay and is defined for each minor movement. Unlike signalized intersections, level of service for unsignalized intersections is not defined for each movement, but only for those which conflict with other movements. Table 2-8 , page 2-24 illustrates these LOS criteria.

Table 2-8: LOS Criteria for Unsignalized Intersections

Level of Service	Measure of Effectiveness (unsignalized)
	Average Delay (seconds)
A	< = 10
B	> 10 & < =15
C	>15 & < = 25
D	>25 & < = 35
E	>35 & < = 50

Table 2-9 summarizes the existing conditions analysis for key unsignalized intersections in the Study Area during the AM peak hour.

Table 2-9: Unsignalized Intersections, 1999 AM Peak Hour

Intersection	Approach	Delay (sec)	LOS	V/C Ratio
Route 202/4 @ Cressey Road	Route 202/4 - EB-L	7.8	A	0.02
	Cressey Road - SB-LR	21.5	C	0.55
	Intersection Avg:	**6.9**	**A**	
Flaggy Meadow Road @ Cressey Road	Flaggy Meadow - EB-L	7.3	A	0.01
	Flaggy Meadow - WB-L	7.7	A	0.01
	Cressey Road - NB-LTR	12.2	B	0.11
	Cressey Road - SB-LTR	15.7	C	0.44
	Intersection Avg:	**8.1**	**A**	
Route 25 @ Cressey Road	Route 25 - WB-L	10.9	B	0.01
	Cressey Road - NB-LR	26.5	D	0.25
	Intersection Avg:	**1.2**	**A**	
Route 25 @ Flaggy Meadow Road	Route 25 - EB-L	8.0	A	0.14
	Route 25 - WB-L	11.2	B	0.15
	Flaggy Meadow - NB-LTR	518.5	F	2.01
	College Ave - SB-LTR		N/A	
	Intersection Avg:	**100.4**	**F**	
Route 25 @ Route 202/4 (West)	Route 25 - EB-L	8.3	A	0.00
	Route 25 - WB-L	16.9	C	0.46
	Route 202/4 - NB-L	277.2	F	0.45
	Route 202/4 - NB-TR	383.1	F	1.69
	Maple St. - SB-LTR		N/A	
	Intersection Avg:	**59.5**	**F**	
Route 25 @ Route 202/4 (East)	Route 25 - EB-L	8.6	A	0.13
	Route 202 - SB-LR	16.1	C	0.31
	Intersection Avg:	**4.7**	**A**	
New Portland Road @ Brackett Road	New Portland – EB - L	7.4	A	
	New Portland – EB-L	9.3	A	
	Brackett Road – NB-LTR	28.6	D	
	Libby Street – SB-LTR	46.4	E	
	Intersection Avg:	10.9	B	
Route 114 @ Day Road	Route 114 – SB-L	8.2	A	0.08
	Day Road - WB-LR	11.5	B	0.4
	Intersection Avg:	0.8	A	

Most of the unsignalized intersections operate quite well in the AM peak. Six of the eight intersections have an LOS of "B" or better. The other two intersections both operate at LOS F. This is primarily because vehicles on the stop-controlled leg of the intersection experience long delays entering the intersections due to heavy peak-hour volumes on the major legs (Route 25).

Table 2-10 summarizes the results of the 1999 Existing Conditions analysis for each unsignalized intersection during the PM peak hour.

Table 2-10: Unsignalized Intersections, 1999 PM Peak Hour

Intersection	Approach Day	Delay (sec)	LOS LOS	V/C Ratio
Route 202/4 @ Cressey Road	Route 202/4 - EB-L	8.3	A	0.02
	Cressey Road - SB-LR	12.6	B	0.55
	Intersection Avg:	**1.0**	**A**	
Flaggy Meadow Road @ Cressey Road	Flaggy Meadow - EB-L	7.5	A	0.01
	Flaggy Meadow - WB-L	7.4	A	0.01
	Cressey Road - NB-LTR	11.9	B	0.11
	Cressey Road - SB-LTR	10.9	B	0.44
	Intersection Avg:	**5.4**	**A**	
Route 25 @ Cressey Road	Route 25 - WB-L	8.4	A	0.01
	Cressey Road - NB-LR	52.5	F	0.25
	Intersection Avg:	**2.8**	**A**	
Route 25 @ Flaggy Meadow Road	Route 25 - EB-L	0.6	A	0.14
	Route 25 - WB-L	8.5	A	0.15
	Flaggy Meadow - NB-LTR	22.7	C	2.01
	College Ave - SB-LTR	77.5	F	-
	Intersection Avg:	**7.8**	**A**	
Route 25 @ Route 202/4 (West)	Route 25 - EB-L	10.4	B	0.00
	Route 25 - WB-L	10.2	B	0.46
	Route 202/4 - NB-L	381.6	F	0.45
	Route 202/4 - NB-TR	333.8	F	1.69
	Maple St. - SB-LTR	N/A		
	Intersection Avg:	**46.6**	**E**	
Route 25 @ Route 202/4 (East)	Route 25 - EB-L	10.0	A	0.13
	Route 202 - SB-LR	20.4	C	0.31
	Intersection Avg:	**4.7**	**A**	
New Portland Road @ Brackett Road	New Portland - EB-L	8.1	A	0.00
	New Portland - WB-L	8.0	A	0.01
	Brackett Road - NB-LTR	30.1	D	0.31
	Libby Street - SB-LTR	21.8	C	0.74
	Intersection Avg:	**6.8**	**A**	
Route 114 @ Day Road	Route 114 - SB-L	9.8	A	0.08
	Day Road - WB-LR	24.1	C	0.04
	Intersection Avg:	**2.3**	**A**	

In general, the unsignalized intersections perform better during the PM peak than in the AM peak. During the PM peak, seven of the intersections operate at LOS A, while one

of the intersections operates at LOS E. The difference between the AM and PM peak-hour performance may be explained as follows:

- During the AM peak, the side roads (i.e. the stop sign-controlled roads) carry a substantial number of vehicles (200+ vehicles in many cases), most of whom are trying to access the main roads. This introduces some heavy delays, as the stopped vehicles face difficulty in finding a gap in traffic on the heavily traveled main roads.

- During the PM peak, fewer vehicles are trying to enter the intersections from the side roads. Vehicles tend to move in the opposite direction—from main road to side road—which is not a stop-controlled movement.

2.3.3 Highways

Level of service criteria for segments of two-lane rural highways consider a complex set of parameters including traffic volume, traffic composition, traffic density, directional distribution, operating speed, facility type, highway dimensions, and percentage of no passing zones. In some instances, certain levels of service cannot be achieved due to prevailing physical considerations, irrespective of the volume of traffic present on the highway. Therefore, it is important to consider not only LOS, but also the volume-to-capacity (v/c) ratio in describing operations on a two-lane highway.

Peak hour link volumes for each leg of the intersection were computed and served as the basis for the two-lane highway analysis the results of which are summarized in Table 2-11, page 2-27 The v/c ratio is presented as an indicator of the ability of the particular highway segment to accommodate additional traffic, while the LOS is presented as an indicator of overall operating conditions.

Nearly half (14 of 30) of the highway segments are at LOS E or worse, and slightly over one-third of these have a v/c ratio greater than 0.75 (75% of available capacity is used). Of the major routes studied, three have v/c ratios that are approaching 1.00. These include segments of Route 25 east and west of Gorham Village, and the Route 22/Route 114 overlap area

Table 2-11: Highway Level of Service, 1999 AM & PM Peak

		1999 Traffic			
Town	LINK	AM PEAK		PM PEAK	
		LOS	V/C	LOS	V/C
Gorham	Rte. 25 - Town Line (West)	E	0.76	E	0.62
Gorham	Rte. 25 - West of Cressey	E	0.81	E	0.74
Gorham	Rte. 25 - East of Cressey	E	0.69	E	0.71
Gorham	Rte. 25 - Flaggy Meadow to Rte. 202	E	0.68	E	0.67
Gorham	Rte. 25 - West of Rte. 114	E	0.85	E	0.93
Gorham	Rte. 25 - East of Rte. 114	E	0.85	E	0.85
Gorham	Rte. 25 - East of New Portland Rd.	D	0.50	E	0.60
Gorham	Rte. 25 (E) - East of Rte. 202	D	0.39	D	0.45
Gorham	Rte. 25 - Town Line (East)	D	0.48	E	0.60
Gorham	Rte. 202 - North of Cousins Rd.	C	0.23	C	0.20
Gorham	Rte. 202 - East of Cressey	D	0.44	D	0.34
Gorham	Rte. 202 - West of Cressey	C	0.27	C	0.26
Gorham	Rte. 202 (E) - North of 25	C	0.21	C	0.19
Gorham	Rte. 202 - North of Libby	D	0.43	C	0.29
Gorham	Rte. 114 - South of Day	D	0.58	D	0.58
Gorham	Rte. 114 - North of Day	E	0.62	E	0.64
Gorham	Rte. 114 - South of Downtown	D	0.53	E	0.62
Gorham	Rte. 114 - North of Downtown	D	0.43	E	0.52
Gorham	Rte. 114 - Town Line (North)	B	0.14	C	0.19
Gorham	Rte. 22 - West of Western 22/114 Split	E	0.57	E	0.63
Gorham	Rte. 22/114 Overlap	F	1.00+	F	1.00+
Gorham	Brackett Rd.	C	0.26	C	0.24
Gorham	Cressey - Between Rte. 202 & Flaggy	C	0.26	B	0.14
Gorham	Cressey - Between Flaggy & Rte. 25	C	0.22	B	0.10
Gorham	Day Rd.	B	0.09	B	0.11
Gorham	Flaggy Meadow - East of Cressey	B	0.15	B	0.13
Gorham	Flaggy Meadow - West of Cressey	C	0.20	C	0.17
Gorham	Libby Ave.	C	0.18	C	0.19
Gorham	New Portland Rd. - West of Brackett	D	0.49	D	0.35
Gorham	New Portland Rd. - East of Brackett	E	0.51	D	0.39

This Page Intentionally Left Blank

3. Traffic Forecasts – Corridor Screening

This chapter documents the methodologies and results of the traffic forecasting prepared for the Gorham Bypass corridor screening process.

3.1 Traffic Forecasting Methodology

Morning and evening peak hour traffic forecasts were developed for the year 2025. The traffic forecasts were developed with the Portland Area Comprehensive Transportation Committee (PACTS) Regional Transportation Planning Model, starting with the model set-ups and documentation provided by PACTS in July 1999.

To improve the model calibration within the Gorham Bypass Study Area, several modifications were made to the base PACTS model setup.

Three of the Buxton and Hollis traffic analysis zones were subdivided in order to allow for improved loading of trips on the roadway network west and southwest of Gorham. This zone-splitting also enabled a more accurate depiction of the specific loading of employment trips to and from the anticipated Poland Spring facility in Hollis.

External traffic volumes were adjusted at the Hollis and Buxton borders with Saco, Dayton, and Waterboro. These adjustments were necessary to reflect the anticipated change in commuting patterns in those communities with the infusion of jobs in Hollis.

Corrections were made to the current and future year roadway networks, as necessary. In particular, it was necessary to update conditions along the Route 22 corridor to replicate actual peak hour vehicle speeds.

3.2 Base Transportation System Assumptions

The transportation system assumed to be in place in the year 2025 reflects projects planned in state, regional, and local plans. The changes from the existing transportation system include the initiation of regional bus transit service to Gorham Village as well as the following roadway improvements:

- widening of the Maine Turnpike to six lanes south of Exit 6A in Scarborough
- opening of Maine Turnpike Exit 7B (connecting with Westbrook Arterial and Rand Road)
- construction of a new northbound I-295 entrance ramp from Broadway (in South Portland)
- closure of the existing northbound I-295 entrance ramp from Westbrook Street in South Portland
- widening of the Maine Mall Road/Payne Road bridge over Maine Turnpike Exit 7 to six lanes
- construction of the I-295 Connector (in Portland) between Congress Street and Commercial Street
- widening of Johnson Road and Western Avenue to 4 and 5 lanes, respectively, in Portland/South Portland

- construction of a southbound Route 1 entrance ramp to the northbound Scarborough Connector
- reconfiguration of the Forest Avenue/I-295 interchange in Portland
- construction of a southbound I-295 entrance ramp in South Portland from the existing Main/Lincoln Street interchange
- capacity improvements along or in the area of the overlap of Routes 22 and 114 in Gorham and Scarborough

3.3 Population and Employment Forecasts

The geographic area covered by the PACTS model encompasses the communities of Portland, South Portland, Westbrook, Scarborough, Cape Elizabeth, Gorham, Buxton, Hollis, Standish, Windham, Falmouth, Cumberland, and Yarmouth. The Greater Portland Council of Governments has forecast the model area to grow by the year 2025:

- to a population of 270,926
- to a total of 112,355 households (72,145 single-family and 40,210 multi-family)
- to a total of 227,234 jobs (14,254 manufacturing; 32,772 trade; 140,681 services; and 39,527 residual)

3.4 Corridors Evaluated

To use the PACTS model for the development of traffic forecasts associated with potential corridors, it was necessary to define specific corridor alignments. The alignments selected for the traffic forecasting process were in the approximate center of the 1000-foot wide corridors defined during the initial stage of the corridor screening process. The Gorham Bypass corridors were coded into the PACTS model as two-lane highways with a posted speed limit of 50 mph. The eight corridors are defined as follows:

- Corridor 1-1: start on South Street (Route 114) at a point 500 feet south of Day Road, continue 7,650 feet to intersect Route 202 (west) at a point 200 feet east of Ledge Lane, continue 4,470 feet to intersect Route 25 (west) at a point 500 feet west of Cressey Road
- Corridor 1A-1A: start on Route 114 (south) at a point 1000 feet north of McLellan Road, continue 12,175 feet to intersect Route 202 (west) at a point 1000 feet west of Harding Road, continue 8,640 feet to intersect Route 25 (west) at a point 3,000 feet west of Cressey Road
- Corridor 2-2: start on Route 25 (west) at a point 3,000 feet west of Cressey Road, continue 7,210 feet to intersect Route 114 (north) at a point 1000 feet north of Meadowcrossing Drive, continue 5,705 feet to intersect Route 202 (east) at a point 1000 feet south of Rodger Road, continue 7,470 feet to intersect Route 237 at a point 200 feet north of Route 25
- Corridor 3-3: start on Route 114 (south) at a point 1000 feet north of McLellan Road, continue 12,175 feet to intersect Route 202 (west) at a point 1000 feet west of Harding Road, continue 8,640 feet to intersect Route 25 (west) at a point 3,000 feet west of Cressey Road, continue 7,210 feet to intersect Route 114 (north) at a point 1000 feet north of Meadowcrossing Drive
- Corridor 4-4: start on Route 114 (south) at a point 1000 feet north of McLellan Road, continue 12,175 feet to intersect Route 202 (west) at a point 1000 feet west of

Harding Road, continue 8,640 feet to intersect Route 25 (west) at a point 3,000 feet west of Cressey Road, continue 7,210 feet to intersect Route 114 (north) at a point 1000 feet north of Meadowcrossing Drive, continue 5,705 feet to intersect Route 202 (east) at a point 1000 feet south of Rodger Road

- Corridor 6-6: start on Route 114 (south) at a point 1000 feet north of McLellan Road, continue 12,175 feet to intersect Route 202 (west) at a point 1000 feet west of Harding Road, continue 8,640 feet to intersect Route 25 (west) at a point 3,000 feet west of Cressey Road, continue 7,210 feet to intersect Route 114 (north) at a point 1000 feet north of Meadowcrossing Drive, continue 5,705 feet to intersect Route 202 (east) at a point 1000 feet south of Rodger Road, continue 7,470 feet to intersect Route 237 at a point 200 feet north of Route 25
- Corridor 8-8: start on New Portland Road at a point 2,950 feet east of Brackett Road, continue 10,025 feet to intersect South Street (Route 114) at a point 500 feet north of Day Road, continue 6,880 feet to intersect Route 202 (west) at a point 200 feet east of Ledge Lane, continue 4,470 feet to intersect Route 25 (west) at a point 500 feet west of Cressey Road
- Corridor 9-9: start on Route 25 (east) at its current intersection with Route 237, continue 4,775 feet to intersect New Portland Road at a point 2,950 feet east of Brackett Road, continue 10,025 feet to intersect South Street (Route 114) at a point 500 feet north of Day Road, continue 6,880 feet to intersect Route 202 (west) at a point 200 feet east of Ledge Lane, continue 4,470 feet to intersect Route 25 (west) at a point 500 feet west of Cressey Road

For Corridors 1-1, 1A-1A, 3-3, and 4-4, the highway crosses but does not provide access to or from Flaggy Meadow Road. For Corridors 8-8 and 9-9, the highway crosses but does not provide access to or from Flaggy Meadow Road and Brackett Road. For Corridor 6-6, the highway crosses but does not provide access to or from Flaggy Meadow Road and Libby Avenue. For Corridor 2-2, the highway crosses but does not provide access to or from Libby Avenue.

An 'upgrade' condition was also defined for analysis, as follows:

- Two through lanes on Route 25 between its intersections with Route 202 (west) and New Portland Road
- Retiming and coordination of the Route 25 traffic signals at intersections with Route 114, Water Street, and New Portland Road
- At the Route 25/Route 114 intersection, separate left-turn and right-turn lanes on the eastbound approach, a second left-turn lane and a second through-lane on the northbound approach, a second left-turn lane on the southbound approach, and a separate left-turn lane on the westbound approach
- At the Route 25/Water Street intersection, separate left-turn lanes on the eastbound and westbound approaches
- At the Route 25/New Portland Road intersection, a separate left-turn lane and a second through-lane on the westbound approach

3.5 Traffic Forecasts for the Year 2025

Traffic forecasts for the year 2025 for eight bypass corridor scenarios and for the base and upgrade conditions are presented in Table 3-1, pages 3-5 to 3-11, and Table 3-2, pages 3-12 to 3-18, for the AM and PM peak hours, respectively. Intersection turning movement

data for 20 Study Area intersections are presented for both the morning and evening peak hours. Existing 1999 turning movement data also is presented.

Table 3-1 Intersection Turning Movements : AM Peak Hour

Table 3-1: Intersection Turning Movements

			AM Peak Hour Volumes	2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ New Portland Road	Northbound											
		Left	30	31	32	32	23	34	29	24	32	32
		Right	25	26	29	27	20	27	26	22	30	32
		Sharp Right	118	115	111	115	131	114	118	128	109	105
	Westbound											
		Sharp Left	1	1	1	1	1	1	1	1	1	1
		Left	5	5	6	5	4	5	5	5	6	6
		Thru	521	590	626	635	337	642	508	370	632	628
	Eastbound											
		Thru	533	602	586	582	371	571	501	369	551	556
		Soft Right	643	680	579	634	625	617	584	560	520	513
		Right	2	2	2	2	2	2	2	2	2	2
	NW-bound											
		Hard Left	26	26	25	26	30	26	27	28	23	23
		Soft Left	77	90	81	89	68	90	80	62	66	64
		Right	2	0	0	0	0	0	0	0	0	0

			AM Peak Hour Volumes	2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Route 202 East	Northbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	0	0	0	0	0	0	0	0	0	0
	Southbound											
		Left	55	75	72	75	64	76	110	62	54	51
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	202	234	267	266	235	262	204	261	265	260
	Eastbound											
		Left	135	165	171	176	161	172	87	162	186	182
		Thru	406	443	408	414	217	405	421	214	373	396
		Right	0	0	0	0	0	0	0	0	0	0
	Westbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	300	315	321	326	88	332	274	102	327	335
		Right	32	44	43	46	21	48	36	22	40	35

			AM Peak Hour Volumes	2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 202 @ Cressey Road	Northbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	0	0	0	0	0	0	0	0	0
		Right	0	0	0	0	0	0	0	0	0	0
	Southbound											
		Left	217	263	230	217	219	221	216	217	222	221
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	25	46	16	6	33	7	4	4	5	4
	Eastbound											
		Left	26	38	7	3	48	6	3	3	2	2
		Thru	331	422	294	269	442	272	290	336	155	168
		Right	0	0	0	0	0	0	0	0	0	0
	Westbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	156	184	191	172	197	169	159	173	141	140
		Right	32	35	21	26	42	30	26	26	27	28

Table 3-1 Intersection Turning Movements : AM Peak Hour (continued)

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Cressey Road at Flaggy Meadow Road	Northbound											
		Left	8	11	4	4	14	5	4	4	4	3
		Thru	34	42	15	15	53	19	15	16	15	15
		Right	2	2	1	0	2	0	0	0	1	1
	Southbound											
		Left	12	21	9	9	12	9	8	8	10	10
		Thru	187	265	175	149	188	155	148	148	151	146
		Right	1	5	1	0	2	0	0	0	0	0
	Eastbound											
		Left	6	12	5	6	12	6	5	5	6	4
		Thru	145	207	73	69	176	55	40	28	152	139
		Right	43	37	56	58	59	57	56	55	59	52
	Westbound											
		Left	6	3	9	8	4	8	8	9	8	13
		Thru	15	23	17	16	17	16	16	16	16	16
		Right	6	8	6	5	6	6	6	6	5	8

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Cressey Road	Northbound											
		Left	43	74	18	16	98	21	16	6	14	14
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	12	18	8	8	16	10	8	12	9	9
	Southbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	0	0	0	0	0	0	0	0	0	0
	Eastbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	850	1020	798	886	782	883	849	693	874	857
		Right	150	250	139	113	158	119	111	110	116	113
	Westbound											
		Left	4	8	4	3	2	3	2	4	3	2
		Thru	183	210	135	152	122	145	135	49	109	111
		Right	0	0	0	0	0	0	0	0	0	0

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Flaggy Meadow Road	Northbound											
		Left	4	5	1	1	1	1	1	0	2	2
		Thru	28	29	7	8	22	7	6	5	15	13
		Right	242	286	80	95	233	77	71	51	188	173
	Southbound											
		Left	1	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	2	1	1
		Right	8	8	7	8	7	8	8	5	7	7
	Eastbound											
		Left	150	153	106	115	110	115	106	105	109	103
		Thru	769	902	721	794	679	787	766	603	790	784
		Right	1	1	1	1	0	1	1	1	1	1
	Westbound											
		Left	80	113	80	71	72	71	71	60	69	69
		Thru	152	172	114	124	96	117	114	37	90	93
		Right	0	0	0	0	0	0	0	0	0	0

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Route 202 West	Northbound											
		Left	8	7	5	4	5	4	4	2	3	3
		Thru	13	12	12	11	13	11	12	14	9	11
		Right	232	279	186	175	292	177	200	233	127	136
	Southbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	0	0	0	0	0	0	0	0	0	0
	Eastbound											
		Left	2	2	2	2	1	2	2	2	3	3
		Thru	1010	1184	847	939	913	933	905	723	1012	993
		Right	1	1	1	1	1	1	1	1	1	1
	Westbound											
		Left	216	249	243	240	268	240	230	253	204	202
		Thru	194	226	147	155	129	151	148	59	117	121
		Right	1	1	1	1	1	1	1	1	1	1

Table 3-1 Intersection Turning Movements : AM Peak Hour (continued)

			AM Peak Hour Volumes	2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 114 @ Day Road	Northbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	296	307	194	219	288	223	220	211	409	410
		Right	11	4	243	82	2	57	18	18	1	1
	Southbound											
		Left	87	36	50	107	37	130	69	65	15	15
		Thru	789	1029	615	644	965	632	638	653	1158	1126
		Right	0	0	0	0	0	0	0	0	0	0
	Eastbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	0	0	0	0	0	0	0	0	0	0
		Right	0	0	0	0	0	0	0	0	0	0
	Westbound											
		Left	1	0	6	3	0	1	1	1	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	22	11	3	10	8	9	13	12	8	8

			AM Peak Hour Volumes	2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
New Portland Road @ Libby Avenue/Brackett Street	Northbound											
		Left	25	26	34	31	19	31	24	16	18	25
		Thru	58	78	72	82	79	88	67	78	69	55
		Right	34	40	107	73	33	72	50	50	32	29
	Southbound											
		Left	6	18	17	20	26	15	27	37	18	18
		Thru	184	363	253	284	433	271	341	354	237	229
		Right	4	11	5	8	13	6	12	11	9	14
	Eastbound											
		Left	2	3	1	2	3	2	2	2	3	2
		Thru	633	713	660	699	693	682	684	675	627	615
		Right	99	77	52	54	63	65	46	34	43	39
	Westbound											
		Left	4	3	4	3	3	4	3	3	2	1
		Thru	90	99	86	96	88	97	94	82	77	71
		Right	2	3	2	2	3	3	3	4	3	2

Table 3-1 Intersection Turning Movements : AM Peak Hour (continued)

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Route 114 (Gorham Village)	Northbound											
		Left	75	87	46	50	92	48	62	52	43	43
		Thru	98	109	87	96	91	94	81	82	99	98
		Right	112	103	86	99	102	107	98	107	89	88
	Southbound											
		Left	241	271	361	356	134	321	164	132	234	233
		Thru	239	311	220	241	224	239	162	158	321	319
		Right	11	15	13	12	8	10	7	4	10	11
	Eastbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	789	862	744	773	648	754	718	596	782	776
		Right	414	523	240	276	575	298	374	376	252	250
	Westbound											
		Left	146	151	119	139	137	168	150	159	146	144
		Thru	369	412	388	389	275	378	359	241	314	313
		Right	103	111	157	161	58	160	101	82	155	154

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 114 (south)	Northbound											
		Left	1		157	146	not	143	137	134	148	149
		Thru	296		219	208	applicable	206	192	189	205	204
		Right	1		0	0		0	0	0	53	55
	Southbound											
		Left	1		0	0		0	0	0	229	238
		Thru	789		565	620		618	620	666	581	565
		Right	1		76	34		23	19	20	71	72
	Eastbound											
		Left	1		123	58		42	33	30	4	4
		Thru	1		0	0		0	0	0	310	324
		Right	1		591	636		667	639	624	526	513
	Westbound											
		Left	1		0	0		0	0	0	59	57
		Thru	0		1	1		1	1	1	174	176
		Right	1		0	0		0	0	0	9	9

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 202 (west)	Northbound											
		Left	1		35	32	not	32	33	31	119	119
		Thru	1		192	142	applicable	132	121	120	270	273
		Right	1		7	6		4	4	4	4	5
	Southbound											
		Left	1		2	3		2	2	2	1	1
		Thru	1		474	454		462	432	415	442	464
		Right	1		12	15		20	21	21	18	18
	Eastbound											
		Left	1		35	42		58	57	63	42	37
		Thru	331		264	386		390	381	421	132	142
		Right	1		221	226		236	231	230	390	369
	Westbound											
		Left	1		18	14		11	9	9	8	8
		Thru	156		160	179		191	174	191	120	117
		Right	1		3	3		3	2	3	1	1

Table 3-1 Intersection Turning Movements : AM Peak Hour (continued)

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes						
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Flaggy Meadow	Northbound											
		Left	1		13	6	not	5	2	5	14	15
		Thru	1		203	167	applicable	175	175	171	270	268
		Right	1		13	15		12	4	9	28	28
	Southbound											
		Left	1		3	4		4	4	3	6	5
		Thru	1		342	354		369	354	322	358	367
		Right	1		3	1		2	2	2	3	3
	Eastbound											
		Left	1		15	13		17	52	22	14	14
		Thru	194		115	103		105	104	105	179	171
		Right	1		136	100		100	87	103	94	106
	Westbound											
		Left	1		11	17		16	13	14	9	10
		Thru	24		14	9		10	12	10	13	13
		Right	1		1	2		3	8	3	1	1

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes						
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 25 (west)	Northbound											
		Left	1		189	162	0	111	88	101	237	233
		Thru	1		1	1	1	76	146	95	1	1
		Right	1		30	18	0	8	1	0	48	49
	Southbound											
		Left	1		0	0	38	0	0	0	0	0
		Thru	1		1	1	1	29	31	17	1	1
		Right	1		0	0	139	3	18	132	0	0
	Eastbound											
		Left	1		0	0	516	9	85	313	0	0
		Thru	1000		900	947	887	959	948	782	930	918
		Right	1		330	347	0	340	329	310	351	357
	Westbound											
		Left	1		17	12	0	5	1	0	16	*18*
		Thru	226		153	168	137	172	181	62	118	118
		Right	1		0	0	23	0	0	0	0	0

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes						
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 114 (north)	Northbound											
		Left			not	not	*1*	15	0	1	not	not
		Thru	201		applicable	applicable	113	183	140	116	applicable	applicable
		Right					16	0	23	12		
	Southbound											
		Left					298	0	290	379		
		Thru	491				404	553	407	350		
		Right					9	41	5	16		
	Eastbound											
		Left					7	63	2	6		
		Thru					532	0	229	401		
		Right					1	22	1	1		
	Westbound											
		Left					29	0	20	14		
		Thru					170	1	44	132		
		Right					132	0	80	135		

Table 3-1 Intersection Turning Movements : AM Peak Hour (continued)

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 202 (east)	Northbound											
		Left			not	not	34	not	52	36	not	not
		Thru	167		applicable	applicable	233	applicable	194	243	applicable	applicable
		Right					10		0	11		
	Southbound											
		Left					25		0	24		
		Thru	257				460		421	494		
		Right					80		92	80		
	Eastbound											
		Left					50		380	45		
		Thru					749		0	699		
		Right					48		162	47		
	Westbound											
		Left					9		0	10		
		Thru					217		0	166		
		Right					10		0	10		

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 237	Northbound											
		Left			not	not	203	not	not	154	not	not
		Thru	87		applicable	applicable	44	applicable	applicable	87	applicable	applicable
		Right					0			0		
	Southbound											
		Left					0			0		
		Thru	457				433			516		
		Right					13			13		
	Eastbound											
		Left					11			10		
		Thru					0			0		
		Right					569			561		
	Westbound											
		Left					0			0		
		Thru					1			0		
		Right					0			0		

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 25 (east)	Northbound											
		Left	0		not	not	not	not	not	not	not	3
		Thru	0		applicable	applicable	applicable	applicable	applicable	applicable	applicable	30
		Right	0									0
	Southbound											
		Left	451									526
		Thru	0									58
		Right	6									8
	Eastbound											
		Left	8									8
		Thru	407									440
		Right	0									8
	Westbound											
		Left	0									20
		Thru	211									240
		Right	79									243

			AM Peak Hour Volumes		2025 AM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Brackett Street	Northbound											
		Left			not	not	not	not	not	not	29	19
		Thru	117	145	applicable	applicable	applicable	applicable	applicable	applicable	81	80
		Right									49	67
	Southbound											
		Left									0	0
		Thru	287	443							274	274
		Right									19	7
	Eastbound											
		Left									39	27
		Thru									293	251
		Right									260	337
	Westbound											
		Left									5	14
		Thru									194	217
		Right									0	0

Table 3-1 Intersection Turning Movements : AM Peak Hour (continued)

Intersection	Direction	Movement	AM Peak Hour Volumes 1999 Existing	AM Peak Hour Volumes 2025 No-Build	2025 AM Peak Hour Volumes Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ New Portland Road	Northbound											
		Left			not applicable	not applicable	not applicable	not applicable	not applicable	not applicable	0	0
		Thru									0	33
		Right									342	285
	Southbound											
		Left									0	17
		Thru									0	67
		Right									0	1
	Eastbound											
		Left									0	0
		Thru	673	772							730	705
		Right									0	0
	Westbound											
		Left									198	164
		Thru	96	105							81	71
		Right									0	0
			20,722	*17,532*	*18,668*	*19,074*	*19,710*	*19,967*	*20,680*	*21,307*	*22,454*	*23,948*

Table 3-2 Intersection Turning Movements – PM Peak Hour

Table 3-2: Intersection Turning Movements

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ New Portland Road	Northbound											
		Left	43	42	41	40	37	41	39	37	41	40
		Right	44	43	49	47	37	46	44	42	55	56
		Sharp Right	82	84	80	83	95	82	86	90	73	72
	Westbound											
		Sharp Left	0	0	0	0	0	0	0	0	0	0
		Left	21	22	24	23	17	23	22	18	25	27
		Thru	732	827	805	799	510	784	689	507	757	784
	Eastbound											
		Thru	436	494	524	531	282	537	425	310	522	526
		Soft Right	230	269	242	266	204	270	239	187	197	191
		Right	3	3	3	3	2	3	3	2	3	3
	NW-bound											
		Hard Left	50	49	47	49	56	48	50	54	46	45
		Soft Left	384	406	346	379	373	368	349	334	311	286
		Right	2	2	2	2	2	2	2	2	2	2

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Route 202 East	Northbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	0	0	0	0	0	0	0	0	0	0
	Southbound											
		Left	23	32	31	33	15	35	26	16	28	25
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	185	226	234	241	220	236	119	222	256	250
	Eastbound											
		Left	191	221	253	251	223	248	193	246	250	246
		Thru	296	311	317	321	87	328	271	100	323	330
		Right	0	0	0	0	0	0	0	0	0	0
	Westbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	571	623	573	582	305	570	592	302	524	557
		Right	35	48	46	48	41	48	70	40	35	32

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 202 @ Cressey Road	Northbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	0	0	0	0	0	0	0	0	0	0
	Southbound											
		Left	20	22	13	16	27	19	16	16	17	17
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	23	33	6	3	42	4	3	3	2	2
	Eastbound											
		Left	28	51	18	6	37	8	5	5	5	4
		Thru	225	265	275	248	284	243	229	250	204	202
		Right	0	0	0	0	0	0	0	0	0	0
	Westbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	280	357	249	228	374	230	245	284	131	142
		Right	93	139	106	93	95	97	92	93	98	97

Table 3-2 Intersection Turning Movements – PM Peak Hour (continued)

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Cressey Road at Flaggy Meadow Road	Northbound											
		Left	33	29	43	44	45	44	43	42	45	40
		Thru	78	156	66	40	79	46	39	39	42	37
		Right	9	5	14	12	6	12	12	13	12	20
	Southbound											
		Left	6	8	6	5	6	6	6	6	5	8
		Thru	32	40	14	14	50	18	15	15	14	14
		Right	11	23	9	10	22	11	10	9	10	8
	Eastbound											
		Left	2	11	1	1	3	1	1	1	1	0
		Thru	60	93	69	63	69	63	64	64	64	66
		Right	11	16	6	6	20	6	6	6	6	4
	Westbound											
		Left	1	1	0	0	1	0	0	0	0	1
		Thru	123	175	62	58	150	46	34	24	129	118
		Right	4	13	1	1	4	1	0	0	2	2

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Cressey Road	Northbound											
		Left	66	166	55	29	74	35	27	26	32	29
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	2	4	2	1	1	1	1	2	1	1
	Southbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	0	0	0	0	0	0	0	0	0	0
	Eastbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	407	468	301	337	272	322	301	109	243	247
		Right	21	36	9	8	48	10	8	3	7	7
	Westbound											
		Left	16	24	10	11	21	13	11	16	12	12
		Thru	823	988	773	858	757	855	822	671	847	830
		Right	0	0	0	0	0	0	0	0	0	0

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Flaggy Meadow Road	Northbound											
		Left	2	3	2	2	1	2	2	1	2	2
		Thru	8	10	10	9	10	9	9	16	11	10
		Right	44	62	44	39	40	39	39	33	38	38
	Southbound											
		Left	23	23	18	16	44	17	19	19	18	18
		Thru	21	22	5	6	17	5	4	4	12	10
		Right	74	75	52	57	54	57	52	52	54	51
	Eastbound											
		Left	21	20	20	21	18	21	20	13	19	19
		Thru	384	435	287	312	243	295	288	95	228	234
		Right	1	1	0	0	0	0	0	0	0	0
	Westbound											
		Left	136	161	45	53	131	43	40	29	106	97
		Thru	767	899	719	792	677	785	764	601	788	782
		Right	0	0	0	0	0	0	0	0	0	0

Table 3-2 Intersection Turning Movements – PM Peak Hour (continued)

Intersection	Direction	Movement	PM Peak Hour Volumes 1999 Existing	2025 No-Build	2025 PM Peak Hour Volumes Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Route 202 West	Northbound											
		Left	10	9	9	9	8	9	8	8	9	10
		Thru	26	27	31	30	29	29	29	31	30	31
		Right	216	249	243	240	268	240	230	253	204	202
	Southbound											
		Left	7	8	8	9	8	9	9	8	9	9
		Thru	6	6	6	5	6	5	5	6	4	5
		Right	1	1	1	1	1	1	1	1	1	1
	Eastbound											
		Left	1	1	1	1	1	1	1	0	1	1
		Thru	434	505	330	347	288	338	331	133	262	272
		Right	6	5	4	3	3	3	3	2	2	2
	Westbound											
		Left	291	350	233	219	367	223	251	292	159	171
		Thru	886	1039	743	823	801	819	793	634	888	871
		Right	8	11	8	9	10	10	10	9	10	9

Intersection	Direction	Movement	PM Peak Hour Volumes 1999 Existing	2025 No-Build	2025 PM Peak Hour Volumes Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 114 @ Day Road	Northbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	794	1035	619	649	971	636	642	657	1165	1133
		Right	6	3	33	17	1	9	8	8	1	1
	Southbound											
		Left	27	13	3	12	9	11	16	15	10	10
		Thru	456	474	299	337	444	344	339	326	630	631
		Right	0	0	0	0	0	0	0	0	0	0
	Eastbound											
		Left	0	0	0	0	0	0	0	0	0	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	0	0	0	0	0	0	0	0	0	0
	Westbound											
		Left	10	3	221	74	2	52	16	16	1	0
		Thru	1	1	1	1	1	1	1	1	1	1
		Right	111	46	64	137	47	166	89	83	19	19

Intersection	Direction	Movement	PM Peak Hour Volumes 1999 Existing	2025 No-Build	2025 PM Peak Hour Volumes Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
New Portland Road @ Libby Avenue/Brackett Street	Northbound											
		Left	65	51	34	35	42	43	30	22	64	108
		Thru	165	326	227	254	388	243	306	317	173	119
		Right	11	9	12	9	8	12	7	7	8	7
	Southbound											
		Left	5	7	4	6	9	7	6	10	5	3
		Thru	97	130	121	137	132	147	112	131	113	87
		Right	16	22	7	12	26	13	14	16	23	22
	Eastbound											
		Left	6	16	7	12	20	9	18	16	7	6
		Thru	258	284	247	274	252	277	268	236	220	203
		Right	38	40	52	47	29	48	36	25	35	54
	Westbound											
		Left	28	33	88	60	27	59	41	41	20	13
		Thru	366	446	393	432	426	415	417	408	321	259
		Right	22	68	62	73	94	56	101	137	20	7

Table 3-2 Intersection Turning Movements – PM Peak Hour (continued)

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Route 25 @ Route 114 (Gorham Village)	Northbound											
		Left	359	453	208	239	498	258	324	326	218	217
		Thru	381	496	350	384	357	381	258	251	512	509
		Right	102	105	83	97	95	118	105	111	102	101
	Southbound											
		Left	153	165	233	239	86	237	149	121	231	228
		Thru	194	217	172	191	181	186	160	162	196	194
		Right	44	58	48	48	37	42	38	29	51	51
	Eastbound											
		Left	19	27	23	21	14	17	12	8	18	18
		Thru	477	533	501	503	355	488	464	312	405	405
		Right	217	250	132	144	266	138	178	149	123	124
	Westbound											
		Left	103	95	79	91	94	98	90	98	82	81
		Thru	855	935	806	838	702	817	778	646	847	841
		Right	129	145	193	191	72	172	88	71	72	71

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 114 (south)	Northbound											
		Left	1		599	645	not	676	648	633	534	520
		Thru	800		573	629	applicable	627	629	675	590	573
		Right	0		0	0		0	0	0	60	58
	Southbound											
		Left	0		0	0		0	0	0	14	14
		Thru	466		344	328		324	303	297	323	322
		Right	1		193	91		66	51	48	6	6
	Eastbound											
		Left	1		77	34		24	20	20	72	73
		Thru	1		1	1		1	1	1	242	245
		Right	1		247	230		225	216	211	233	234
	Westbound											
		Left	1		0	0		0	0	0	84	86
		Thru	1		1	1		1	1	1	347	362
		Right	1		0	0		0	0	0	232	241

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 202 (west)	Northbound											
		Left	1		202	207	not	216	211	211	357	337
		Thru	1		563	501	applicable	508	467	449	515	536
		Right	1		30	23		18	14	15	13	14
	Southbound											
		Left	1		5	4		4	4	4	1	1
		Thru	1		260	208		198	182	181	353	352
		Right	1		32	38		53	52	58	38	34
	Eastbound											
		Left	1		19	24		33	34	35	30	30
		Thru	253		259	291		309	282	310	195	190
		Right	1		57	53		51	53	51	192	193
	Westbound											
		Left	1		6	5		4	3	3	4	4
		Thru	303		241	353		357	349	385	121	130
		Right	1		2	2		2	2	2	1	1

Table 3-2 Intersection Turning Movements – PM Peak Hour (continued)

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Flaggy Meadow	Northbound											
		Left	1		145	86	not	86	75	88	81	91
		Thru	1		424	393	applicable	411	394	358	435	446
		Right	1		19	52		49	41	44	27	30
	Southbound		0									
		Left	1		3	7		8	24	9	4	4
		Thru	1		237	213		226	205	219	326	323
		Right	1		24	11		15	45	19	12	12
	Eastbound		0									
		Left	1		17	4		5	7	5	9	8
		Thru	73		56	29		30	37	31	40	39
		Right	1		59	17		16	6	14	43	44
	Westbound		0									
		Left	1		6	13		11	3	8	24	25
		Thru	167		104	88		90	90	90	154	147
		Right	1		2	3		3	4	3	5	4

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 25 (west)	Northbound											
		Left	1		395	375	0	337	310	276	396	397
		Thru	1		1	1	1	66	80	84	1	1
		Right	1		33	23	0	9	2	0	31	33
	Southbound		0									
		Left	1		0	0	44	0	1	0	0	0
		Thru	1		1	1	1	54	97	65	1	1
		Right	1		0	0	459	8	76	278	0	0
	Eastbound		0									
		Left	1		0	0	264	6	33	250	0	0
		Thru	428		290	319	260	326	343	117	223	224
		Right	1		247	227	0	209	166	191	305	299
	Westbound		0									
		Left	1		27	16	0	7	1	0	43	44
		Thru	869		800	842	789	853	843	695	827	816
		Right	1		0	0	34	0	0	0	0	0

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 114 (north)	Northbound											
		Left			not	not	2	24	1	1	not	not
		Thru	529		applicable	applicable	435	596	438	377	applicable	applicable
		Right					31	0	22	15		
	Southbound											
		Left					257	0	156	262		
		Thru	391				219	355	272	225		
		Right					13	37	4	13		
	Eastbound											
		Left					9	45	5	18		
		Thru					282	1	105	304		
		Right					1	28	1	1		
	Westbound											
		Left					32	0	45	23		
		Thru					500	1	169	338		
		Right					321	0	312	408		

Table 3-2 Intersection Turning Movements – PM Peak Hour (continued)

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 202 (east)	Northbound											
		Left			not	not	42	not	142	42	not	not
		Thru	226		applicable	applicable	405	applicable	370	435	applicable	applicable
		Right					8		0	9		
	Southbound											
		Left					12		0	12		
		Thru	208				291		242	302		
		Right					62		379	57		
	Eastbound											
		Left					71		216	70		
		Thru					461		1	462		
		Right					42		66	44		
	Westbound											
		Left					13		0	13		
		Thru					723		1	654		
		Right					22		0	21		

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 237	Northbound											
		Left			not	not	546	not	not	518	not	not
		Thru	554		applicable	applicable	488	applicable	applicable	624	applicable	applicable
		Right					0			0		
	Southbound											
		Left					0			0		
		Thru	157				*55*			156		
		Right					14			18		
	Eastbound											
		Left					*15*			16		
		Thru					1			1		
		Right					428			419		
	Westbound											
		Left					0			0		
		Thru					1			1		
		Right					0			0		

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Route 25 (east)	Northbound											
		Left	1		not	not	not	not	not	not	not	10
		Thru	7		applicable	applicable	applicable	applicable	applicable	applicable	applicable	75
		Right	1									27
	Southbound											
		Left	139									244
		Thru	7									28
		Right	15									9
	Eastbound											
		Left	18									8
		Thru	212									241
		Right	1									3
	Westbound											
		Left	1									7
		Thru	497									538
		Right	533									642

Table 3-2 Intersection Turning Movements – PM Peak Hour (continued)

			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ Brackett Street	Northbound											
		Left	1		not applicable	not applicable	not applicable	not applicable	not applicable	not applicable	218	283
		Thru	241								230	230
		Right	1								4	12
	Southbound											
		Left	0								0	0
		Thru	163								112	112
		Right	1								55	38
	Eastbound											
		Left	1								16	6
		Thru	8								259	285
		Right	3								41	26
	Westbound											
		Left	1								69	93
		Thru	5								392	373
		Right	0								0	0
			PM Peak Hour Volumes		2025 PM Peak Hour Volumes							
Intersection	Direction	Movement	1999 Existing	2025 No-Build	Corridor 1-1	Corridor 1A-1A	Corridor 2-2	Corridor 3-3	Corridor 4-4	Corridor 6-6	Corridor 8-8	Corridor 9-9
Gorham Bypass @ New Portland Road	Northbound											
		Left	0		not applicable	not applicable	not applicable	not applicable	not applicable	not applicable	0	0
		Thru	1								0	89
		Right	10								266	220
	Southbound											
		Left	1								0	1
		Thru	1								1	30
		Right	1								0	0
	Eastbound											
		Left	1								0	0
		Thru	274								232	206
		Right	0								0	0
	Westbound											
		Left	1								429	435
		Thru	416								336	279
		Right	1								0	5
			22,643	*17,239*	*20,477*	*20,757*	*21,362*	*21,836*	*22,587*	*23,505*	*24,133*	*25,856*

4. Alignment Alternative Screening

Alternative bypass alignments were developed within each of the selected bypass corridors. A total of 16 distinct alignments were designed to a conceptual level during the course of the development and screening process. Each alternative was evaluated to determine its ability to satisfy the project needs while considering impacts to natural and manmade resources in the Study Area. The development and screening process was iterative. Initially, 13 alternatives were designed, evaluated and presented to the Public Advisory Committee for input. Two additional bypass alternatives (1e and 6c) were developed. Evaluation and screening focused on primary areas of potential impact including wetlands, streams, floodplains, prime and unique farmland, wildlife habitat, residential and business relocations, community facilities, and effects on potential future development. A 16th alternative (Alternative 6d) was developed as a combination of segments of Alternative 1e and Alternative 6c.

4.1 Alternatives Dismissed

The evaluation and screening of the 16 alternative bypass alignments resulted in dismissal of 11 alternatives from further consideration. Traffic forecasts were developed for these alternatives, but their elimination was primarily due to the degree of impact to the natural and manmade environment.

- Alternative 1
- Alternative 1a
- Alternative 1b
- Alternative 1d
- Alternative 1d North
- Alternative 1d South
- Alternative 4
- Alternative 6
- Alternative 6a
- Alternative 8a
- Alternative 8b

4.2 Alternatives Retained for Further Analysis

The evaluation and screening process resulted in five alternatives being retained for final analysis:

- Alternative 1c
- Alternative 1e
- Alternative 6b
- Alternative 6c
- Alternative 6c

These alternatives are discussed in Chapter 5

This Page Intentionally Left Blank

5. Traffic Forecasts – Alignment Alternatives

This chapter documents the traffic forecasting methodology, assumptions, and results in the Gorham Bypass Alternative Alignments Screening process.

5.1 Traffic Forecasting Methodology

Morning and evening peak hour traffic forecasts were developed for the years 2005 and 2025. The traffic forecasts were developed with the Portland Area Comprehensive Transportation Committee (PACTS) Regional Transportation Planning Model.

5.2 Base Transportation System

The base transportation system expected to be in place in the year 2005 reflects projects planned in state, regional, and local plans. The changes from the existing transportation system include the following improvements:

- Widening of the Maine Turnpike to six lanes south of Exit 6A in Scarborough
- Opening of Maine Turnpike Exit 7B (connecting with Westbrook Arterial and Rand Road) in Westbrook and Portland
- Construction of the I-295 Connector (in Portland) between Congress Street and Commercial Street
- Widening of Johnson Road and Western Avenue to four and five lanes, respectively, in Portland/South Portland

The base transportation system expected to be in place in the year 2025 includes the year 2005 base transportation system plus the initiation of regional bus transit service to Gorham Village and the following improvements:

- Construction of a new northbound I-295 entrance ramp from Broadway in South Portland
- Closure of the existing northbound I-295 entrance ramp from Westbrook Street in South Portland
- Widening of the Maine Mall Road/Payne Road bridge over Maine Turnpike Exit 7 to six lanes
- Construction of a southbound Route 1 entrance ramp to the northbound Scarborough Connector
- Reconfiguration of the Forest Avenue/I-295 interchange in Portland
- Construction of a southbound I-295 entrance ramp in South Portland from the existing Main/Lincoln Street interchange
- Capacity improvements along or in the area of the overlap of Routes 22 and 114 in Gorham and Scarborough

5.3 Population and Employment Forecasts

The geographic area covered by the PACTS model encompasses the communities of Portland, South Portland, Westbrook, Scarborough, Cape Elizabeth, Gorham, Buxton,

Hollis, Standish, Windham, Falmouth, Cumberland, and Yarmouth. The Greater Portland Council of Governments has forecast the model area to grow by the years 2000 and 2025:

- To populations of 218,099 and 270,926, respectively
- To totals of 88,967 and 112,355 households, respectively
- To totals of 192,517 and 227,234 jobs, respectively

5.4 Alignment Alternatives Evaluated

The Gorham Bypass alignment alternatives were coded into the PACTS model as two-lane highways with a posted speed limit of 50 mph. The five alignment alternatives are defined as follows for purposes of network coding:

- Alternative 1c: start on South Street (Route 114) at a point 183 meters (600 feet) south of Day Road, continue 2,400 meters (7,870 feet) to intersect Route 202 (west) at a point 91 meters (300 feet) west of Cressey Road, continue 1,363 meters (4,470 feet) to intersect Route 25 (west) at a point 46 meters (150 feet) west of Cressey Road.

- Alternative 1e: start on South Street (Route 114) at a point 396 meters (1,300 feet) south of Waterhouse, continue 3,963 meters (13,000 feet) to intersect Route 202 (west) at a point 91 meters (300 feet) west of Cressey Road, continue 1,363 meters (4,470 feet) to intersect Route 25 (west) at a point 46 meters (150 feet) west of Cressey Road.

- Alternative 6b: start on Route 114 (south) at a point 183 meters (600 feet) south of Day Road, continue 2,400 meters (7,870 feet) to intersect Route 202 (west) at a point 91 meters (300 feet) west of Cressey Road, continue 1,363 meters (4,470 feet) to intersect Route 25 (west) at a point 46 meters (150 feet) west of Cressey Road, continue 2,012 meters (6,600 feet) to intersect Route 114 (north) at a point 381 meters (1,250 feet) north of Meadow Crossing Drive, continue 1,829 meters (6,000 feet) to intersect Route 202 (east) at a point 610 meters (2,000 feet) south of Libby Avenue, continue 2,348 meters (7,700 feet) to intersect Route 25 (east) at Mosher Corner (Route 237).

- Alternative 6c: start on South Street (Route 114) at a point 183 meters (600 feet) south of Day Road, continue 2,400 meters (7,870) feet to intersect Route 202 (west) at a point at a point 91 meters (300 feet) west of Cressey Road, continue 1,363 meters (4,470 feet) to intersect Route 25 (west) at a point 284 meters (930 feet west) of Cressey Road, then start another alignment on Route 25 (west) at a point 2,744 meters (9,000 feet) west of Cressey Road, continue 3,445 meters (11,300 feet) to intersect Route 114 (north) at a point 381 meters (1,250 feet) north of Meadow Crossing Drive, continue 1,829 meters (6,000 feet) to intersect Route 202 (east) at a point 610 meters (2,000 feet) south of Libby Avenue, continue 2,348 meters (7,700 feet) to intersect Route 25 (east) at Mosher Corner (Route 237).

- Alternative 6d: start on South Street (Route 114) at a point 183 meters (600 feet) south of Day Road, continue 2,400 meters (7,870 feet) to intersect Route 202 (west) at a point 91 meters (300 feet) west of Cressey Road, continue 1,363 meters (4,470

feet) to intersect Route 25 (west) at a point 284 meters (930 feet west) of Cressey Road, then start another alignment on Route 25 (west) at a point 2,744 meters (9,000 feet) west of Cressey Road, continue 3,445 meters (11,300 feet) to intersect Route 114 (north) at a point 381 meters (1,250 feet) north of Meadow Crossing Drive, continue 1,829 meters (6,000 feet) to intersect Route 202 (east) at a point 610 meters (2,000 feet) south of Libby Avenue, continue 2,348 meters (7,700 feet) to intersect Route 25 (east) at Mosher Corner (Route 237).

For Alternatives 1c and 1e, the highway crosses but does not provide access to or from Flaggy Meadow Road. For Alternatives 6b, 6c, and 6d, the highway crosses but does not provide access to or from Flaggy Meadow Road and Libby Avenue.

An 'upgrade' condition for the year 2005 was defined for analysis, as follows:

- Two through lanes on Route 25 between its intersections with Route 202 (west) and New Portland Road
- Retiming and coordination of the Route 25 traffic signals at intersections with Route 114, Water Street, and New Portland Road to reflect year 2005 traffic volumes
- At the Route 25/Route 114 intersection, separate left-turn and right-turn lanes on the eastbound approach, a second left-turn lane on the northbound approach, a second left-turn lane on the southbound approach, and a separate left-turn lane on the westbound approach
- At the Route 25/Water Street intersection, separate left-turn lanes on the eastbound and westbound approaches
- At the Route 25/New Portland Road intersection, a separate left-turn lane and a second through-lane on the westbound approach.

An 'upgrade' condition for the year 2025 was also defined for analysis. It included the year 2005 upgrade improvements as well as the following:

- Retiming of the Route 25 traffic signals at intersections with Route 114, Water Street, and New Portland Road to reflect year 2025 traffic volumes
- At the Route 25/Route 114 intersection, a second through-lane on the northbound approach

5.5 Traffic Forecasts for the Years 2005 and 2025

Traffic forecasts for the years 2005 and 2025 for five alignment alternatives and for the base and upgrade conditions are presented in Table 5-1, page 5-4, Table 5-2, page 5-10, Table 5-3, page 5-16 and Table 5-4, page 5-22. Presented are intersection turning movements for both the morning and evening peak hours. Forecasts are presented for 17 intersections within the Study Area. The evaluation of these traffic forecasts is presented in Chapter 7.

Table 5-1 Alternative Intersection Turning Movements
Year 2005 AM Peak Hour

Intersection:	Route 25 @ New Portland Road							
	AM Peak Hour							
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	30	26	25	27	30	19	18	19
Right	25	26	26	27	29	25	26	25
Sharp Right	118	117	118	115	111	122	120	121
Westbound								
Sharp Left	1	1	1	1	1	1	1	1
Left	5	5	5	6	6	5	6	5
Thru	521	543	609	612	601	302	309	311
Eastbound								
Thru	533	610	746	577	607	426	450	458
Soft Right	643	688	867	637	594	529	527	565
Right	2	2	2	2	2	2	2	2
Northwestbound								
Hard Left	26	27	27	22	24	28	25	26
Soft Left	77	81	93	61	70	50	39	44
Right	2	0	0	0	0	0	0	0

Intersection:	Route 25 @ Route 202 East							
	AM Peak Hour							
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	0	0	0	0	0	0	0	0
Thru	1	1	1	1	1	1	1	1
Right	0	0	0	0	0	0	0	0
Southbound								
Left	55	67	64	63	64	72	68	73
Thru	1	1	1	1	1	1	1	1
Right	202	227	285	251	239	186	199	200
Eastbound								
Left	135	157	205	164	163	126	144	143
Thru	406	458	539	420	455	309	316	324
Right	0	0	0	0	0	0	0	0
Westbound								
Left	0	0	0	0	0	0	0	0
Thru	300	286	284	338	330	116	116	115
Right	32	34	29	39	37	21	21	22

Intersection:	Route 202 @ Cressey Road							
	AM Peak Hour							
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	0	0	0	0	0	0	0	0
Thru	1	0	0	0	0	0	0	0
Right	0	0	0	0	0	0	0	0
Southbound								
Left	217	233	276	237	227	218	225	228
Thru	1	1	1	1	1	1	1	1
Right	25	28	32	66	19	23	18	15
Eastbound								
Left	26	34	30	29	14	29	17	14
Thru	331	380	412	288	256	298	291	267
Right	0	0	0	0	0	0	0	0
Westbound								
Left	0	0	0	0	0	0	0	0
Thru	156	160	171	174	156	156	172	171
Right	32	39	41	21	34	44	38	43

Table 5-1 Alternative Intersection Turning Movements
Year 2005 AM Peak Hour (continued)

Intersection:	Cressey Road at Flaggy Meadow Road							
AM Peak Hour								
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	8	10	8	19	14	25	19	19
Thru	34	43	43	15	17	21	16	16
Right	2	2	3	0	1	0	1	1
Southbound								
Left	12	20	25	8	9	8	9	9
Thru	187	223	267	155	153	158	155	156
Right	1	4	3	1	1	7	2	2
Eastbound								
Left	6	10	8	10	7	29	8	9
Thru	145	197	210	69	89	36	140	164
Right	43	28	30	173	96	91	90	87
Westbound								
Left	6	3	5	5	4	1	3	3
Thru	15	18	17	26	18	22	28	25
Right	6	7	9	2	2	2	2	2

Intersection:	Route 25 @ Cressey Road							
AM Peak Hour								
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	43	65	64	17	15	84	4	8
Thru	1	1	1	1	1	1	1	1
Right	12	17	17	11	9	18	15	14
Southbound								
Left	0	0	0	0	0	0	0	0
Thru	1	1	1	1	1	1	1	1
Right	0	0	0	0	0	0	0	0
Eastbound								
Left	0	0	0	0	0	0	0	0
Thru	850	949	978	740	810	628	462	594
Right	150	203	253	120	119	136	118	123
Westbound								
Left	4	6	9	3	3	1	10	1
Thru	183	177	186	103	119	67	41	10
Right	0	0	0	0	0	0	0	0

Intersection:	Route 25 @ Flaggy Meadow Road							
AM Peak Hour								
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	4	4	4	1	1	0	1	0
Thru	28	30	30	8	12	6	23	20
Right	242	287	308	96	131	64	201	232
Southbound								
Left	1	0	0	0	0	0	0	0
Thru	1	1	1	2	1	2	3	3
Right	8	8	8	6	8	6	4	1
Eastbound								
Left	150	152	149	102	113	96	83	77
Thru	769	859	897	698	747	590	421	542
Right	1	1	1	1	1	1	1	1
Westbound								
Left	80	76	80	115	70	79	109	79
Thru	152	146	155	87	99	59	38	7
Right	0	0	0	0	0	0	0	0

Table 5-1 Alternative Intersection Turning Movements
Year 2005 AM Peak Hour (continued)

Intersection:		Route 25 @ Route 202 West							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	8	7	7	5	4	4	3	1
	Thru	13	13	13	14	12	14	14	10
	Right	232	278	338	187	182	187	199	210
Southbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	2	2	2	2	2	2	1	1
	Thru	1010	1110	1259	841	927	709	606	790
	Right	1	1	1	1	1	1	1	1
Westbound									
	Left	216	215	240	209	207	199	217	227
	Thru	194	186	195	128	129	92	70	31
	Right	1	1	1	1	1	1	1	1

Intersection:		Route 114 @ Day Road							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	0	0	0	0	0	0	0	0
	Thru	296	285	297	185	207	178	177	196
	Right	11	6	3	30	15	35	36	6
Southbound									
	Left	87	48	27	2	9	0	0	23
	Thru	789	808	841	602	609	568	582	601
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	0	0	0	0	0	0	0	0
	Thru	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0
Westbound									
	Left	3	3	1	62	25	48	22	1
	Thru	1	1	1	1	0	0	0	0
	Right	22	12	7	0	2	0	0	6

Intersection:		New Portland Road @ Libby Avenue/Brackett Street							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	25	26	26	33	35	23	18	21
	Thru	58	62	56	59	61	59	58	63
	Right	34	46	37	86	83	58	51	53
Southbound									
	Left	6	14	8	5	12	23	36	30
	Thru	184	215	226	135	198	262	253	306
	Right	4	7	5	2	5	8	11	11
Eastbound									
	Left	2	2	2	1	1	1	1	2
	Thru	633	703	760	672	653	653	664	667
	Right	99	58	118	89	54	38	25	36
Westbound									
	Left	4	3	5	5	3	2	1	2
	Thru	90	93	112	68	76	68	56	61
	Right	2	2	2	1	1	2	2	2

Table 5-1 Alternative Intersection Turning Movements
Year 2005 AM Peak Hour (continued)

Intersection:	Route 25 @ Route 114 (Gorham Village)							
	AM Peak Hour							
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	75	74	71	40	40	40	38	42
Thru	98	94	96	69	75	53	62	70
Right	112	108	124	93	98	112	97	102
Southbound								
Left	241	251	326	328	318	110	184	171
Thru	239	239	224	166	187	83	123	145
Right	11	12	13	10	9	3	5	5
Eastbound								
Left	0	0	0	0	0	0	0	0
Thru	789	881	1136	789	798	657	623	658
Right	414	445	414	211	249	262	220	296
Westbound								
Left	146	137	135	110	130	119	89	105
Thru	369	365	421	349	339	211	195	191
Right	103	100	121	129	135	60	68	67

Intersection:	Gorham Bypass @ Route 114 (south)							
	AM Peak Hour							
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	1		not	125	103	119	118	103
Thru	296		applicable	220	219	209	199	185
Right	1			0	0	0	0	0
Southbound								
Left	1			0	0	0	0	0
Thru	789			534	594	512	536	608
Right	1			79	33	78	62	16
Eastbound								
Left	1			125	55	130	93	19
Thru	1			0	0	0	0	0
Right	1			434	395	444	429	365
Westbound								
Left	1			0	0	0	0	0
Thru	0			1	1	1	1	1
Right	1			0	0	0	0	0

Intersection:	Gorham Bypass @ Route 202 (west)							
	AM Peak Hour							
	Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound								
Left	1		not	16	23	30	24	19
Thru	1		applicable	110	79	113	99	66
Right	1			78	35	55	57	35
Southbound								
Left	1			5	3	4	1	1
Thru	1			275	184	294	278	191
Right	1			4	9	9	10	10
Eastbound								
Left	1			35	55	54	44	52
Thru	331			209	208	243	221	214
Right	1			246	255	265	229	183
Westbound								
Left	1			38	11	15	15	10
Thru	156			159	139	138	149	152
Right	1			5	2	2	3	3

Table 5-1 Alternative Intersection Turning Movements
Year 2005 AM Peak Hour (continued)

Intersection:		Gorham Bypass @ Route 25 (west)							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	1		not	111	121	91	129	107
	Thru	1		applicable	1	0	77	0	0
	Right	1			20	16	0	17	14
Southbound									
	Left	1			0	0	0	0	0
	Thru	1			1	0	36	0	0
	Right	1			0	0	87	0	0
Eastbound									
	Left	1			0	0	260	0	0
	Thru	1000			816	896	747	523	630
	Right	1			384	189	271	284	197
Westbound									
	Left	1			10	7	0	6	4
	Thru	226			120	146	110	45	65
	Right	1			0	0	0	0	0

Intersection:		Gorham Bypass @ Route 114 (north)							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left			not	not	not	5	11	10
	Thru	201		applicable	applicable	applicable	77	77	76
	Right						15	28	26
Southbound									
	Left						356	215	226
	Thru	491					212	193	202
	Right						11	4	4
Eastbound									
	Left						3	23	25
	Thru						327	449	457
	Right						7	90	97
Westbound									
	Left						16	61	63
	Thru						107	156	162
	Right						129	78	82

Intersection:		Gorham Bypass @ Route 202 (east)							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left			not	not	not	24	17	18
	Thru	167		applicable	applicable	applicable	201	211	216
	Right						5	3	3
Southbound									
	Left						18	17	17
	Thru	257					389	389	386
	Right						95	93	95
Eastbound									
	Left						74	120	125
	Thru						581	525	535
	Right						42	46	49
Westbound									
	Left						5	6	6
	Thru						134	185	194
	Right						10	16	15

Table 5-1 Alternative Intersection Turning Movements
Year 2005 AM Peak Hour (continued)

Intersection:		Gorham Bypass @ Route 25 (east)							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Eastbound Route 25									
	to Bypass	1	0	0	0	0	4	5	5
	to Rt 237	8	9	9	9	8	0	0	0
	to Rt 25E	407	428	502	440	444	166	183	186
Southbound Route 237									
	to Rt 25E	451	476	457	459	460	310	268	266
	to Rt 25W	6	6	5	7	7	0	0	0
	to Bypass	1	0	0	0	0	5	5	5
Eastbound Gorham Bypass									
	to Rt 237	1	0	0	0	0	13	13	13
	to Rt 25E	1	0	0	0	0	588	529	538
	to Rt 25W	1	0	0	0	0	3	3	3
Westbound Route 25									
	to Rt 25W	211	205	207	272	269	57	60	57
	to Bypass	1	0	0	0	0	139	197	205
	to Rt 237	79	95	91	99	100	63	61	60

Intersection:		Route 25 @ Libby							
	AM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	12	16	23	18	17	15	12	15
	Thru	25	28	27	24	25	27	26	31
	Right	9	10	11	11	11	3	3	4
Southbound									
	Left	70	47	45	72	58	8	11	11
	Thru	138	188	189	140	181	199	226	244
	Right	21	18	21	26	20	8	9	9
Eastbound									
	Left	8	9	9	7	8	10	12	11
	Thru	365	397	467	395	406	158	174	176
	Right	27	60	73	29	47	152	137	151
Westbound									
	Left	10	16	14	11	17	11	11	12
	Thru	227	223	227	303	288	64	68	64
	Right	3	0	0	0	0	0	0	0

Table 5-2 Alternative Intersection Turning Movements
Year 2005 PM Peak Hour

Intersection:	Route 25 @ New Portland Road								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	43	39	41	43	42	37	39	42
	Right	44	45	44	56	51	43	50	46
	Sharp Right	82	85	84	70	75	89	80	81
Westbound									
	Sharp Left	0	0	0	0	0	0	0	0
	Left	21	22	22	22	24	21	22	21
	Thru	732	838	1024	792	833	585	618	629
Eastbound									
	Thru	436	454	510	512	503	253	258	260
	Soft Right	230	243	279	183	208	148	117	131
	Right	3	3	3	3	3	2	2	2
Northwestbound									
	Hard Left	50	49	50	49	47	52	51	51
	Soft Left	384	411	518	381	355	316	315	338
	Right	2	2	3	3	2	2	2	2

Intersection:	Route 25 @ Route 202 East								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Southbound									
	Left	23	25	21	28	27	15	15	16
	Thru	1	1	1	1	1	1	1	1
	Right	185	214	281	224	223	173	197	195
Eastbound									
	Left	191	215	270	237	226	175	188	189
	Thru	296	282	280	334	326	114	115	113
	Right	0	0	0	0	0	0	0	0
Westbound									
	Left	0	0	0	0	0	0	0	0
	Thru	571	644	758	591	639	435	444	455
	Right	35	43	41	40	41	46	43	46

	Route 202 @ Cressey Road								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Southbound									
	Left	20	24	26	13	21	27	24	27
	Thru	1	1	1	1	1	1	1	1
	Right	23	30	26	26	13	26	15	12
Eastbound									
	Left	28	31	36	74	21	25	21	17
	Thru	225	231	247	251	224	225	248	247
	Right	0	0	0	0	0	0	0	0
Westbound									
	Left	0	0	0	0	0	0	0	0
	Thru	280	321	348	243	217	252	247	226
	Right	93	109	152	113	103	94	101	104

Table 5-2 Alternative Intersection Turning Movements
Year 2005 PM Peak Hour (continued)

Intersection:	Cressey Road at Flaggy Meadow Road								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	33	21	23	133	74	70	69	67
	Thru	78	114	158	46	44	49	46	47
	Right	9	4	7	7	6	1	5	4
Southbound									
	Left	6	7	9	2	2	2	2	2
	Thru	32	40	41	14	16	20	16	15
	Right	11	18	15	18	12	53	15	16
Eastbound									
	Left	2	7	6	3	2	14	4	4
	Thru	60	72	67	103	72	87	110	100
	Right	11	14	11	26	19	34	26	26
Westbound									
	Left	1	1	1	0	0	0	0	0
	Thru	123	167	178	59	75	30	119	139
	Right	4	12	17	0	1	0	1	1

Intersection:	Route 25 @ Cressey Road								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	66	119	169	36	35	52	34	39
	Thru	1	1	1	1	1	1	1	1
	Right	2	3	4	2	1	1	5	1
Southbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	0	0	0	0	0	0	0	0
	Thru	407	394	413	230	264	150	91	22
	Right	21	32	31	8	7	41	2	4
Westbound									
	Left	16	23	22	15	12	24	20	18
	Thru	823	919	947	716	784	608	447	575
	Right	0	0	0	0	0	0	0	0

Intersection:	Route 25 @ Flaggy Meadow Road								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	2	2	2	2	2	1	2	1
	Thru	8	8	8	14	10	14	20	26
	Right	44	42	44	63	38	44	60	43
Southbound									
	Left	23	22	24	18	19	23	17	22
	Thru	21	23	23	6	9	5	17	15
	Right	74	75	74	50	56	47	41	38
Eastbound									
	Left	21	22	22	15	20	15	10	3
	Thru	384	369	391	221	250	150	96	19
	Right	1	1	1	0	0	0	0	0
Westbound									
	Left	136	161	173	54	73	36	113	131
	Thru	767	857	894	696	745	588	420	540
	Right	0	0	0	0	0	0	0	0

Table 5-2 Alternative Intersection Turning Movements
Year 2005 PM Peak Hour (continued)

Intersection:	Route 25 @ Route 202 West								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	10	8	8	10	9	8	7	5
	Thru	26	27	26	31	29	30	30	27
	Right	216	215	240	209	207	199	217	227
Southbound									
	Left	7	8	8	8	8	8	8	10
	Thru	6	6	6	6	6	6	6	5
	Right	1	1	1	1	1	1	1	1
Eastbound									
	Left	1	1	1	1	1	1	0	0
	Thru	434	417	436	285	289	207	156	70
	Right	6	5	5	4	3	3	2	1
Westbound									
	Left	291	349	424	234	229	235	249	263
	Thru	886	973	1105	738	813	622	531	693
	Right	8	12	12	8	9	9	9	13

Intersection:	Route 114 @ Day Road								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	0	0	0	0	1	1	1	1
	Thru	794	813	846	606	613	572	586	605
	Right	6	3	2	16	8	19	20	4
Southbound									
	Left	27	15	8	0	3	0	0	7
	Thru	456	439	458	286	319	275	273	302
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	0	0	0	0
	Right	0	0	0	0	1	1	1	1
Westbound									
	Left	10	10	4	208	83	159	74	5
	Thru	1	1	1	1	0	0	0	0
	Right	111	124	45	18	72	3	1	27

Intersection:	New Portland Road @ Libby Avenue/Brackett Street								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	65	38	78	58	36	25	16	24
	Thru	165	193	202	121	178	235	226	275
	Right	11	7	13	13	9	6	3	5
Southbound									
	Left	5	5	6	3	3	4	4	4
	Thru	97	104	94	99	102	98	97	105
	Right	16	15	19	7	7	10	12	12
Eastbound									
	Left	6	11	8	3	7	12	17	16
	Thru	258	265	321	195	217	195	160	176
	Right	38	40	39	50	53	35	27	31
Westbound									
	Left	28	38	31	71	69	48	42	43
	Thru	366	436	493	405	386	386	397	400
	Right	22	53	30	20	45	85	131	110

Table 5-2 Alternative Intersection Turning Movements
Year 2005 PM Peak Hour (continued)

Intersection:	Route 25 @ Route 114 (Gorham Village)								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	359	386	359	183	216	228	191	256
	Thru	381	382	357	264	298	132	196	231
	Right	102	96	94	77	91	83	62	73
Southbound									
	Left	153	148	180	192	200	89	102	100
	Thru	194	187	190	137	148	105	123	138
	Right	44	49	56	37	39	20	25	29
Eastbound									
	Left	19	20	22	17	15	5	8	8
	Thru	477	472	545	451	438	273	252	247
	Right	217	213	206	115	116	116	109	122
Westbound									
	Left	103	100	114	85	90	103	89	94
	Thru	855	954	1231	855	865	711	675	714
	Right	129	134	174	176	170	59	98	92

Intersection:	Gorham Bypass @ Route 114 (south)								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	1		not	440	400	450	435	370
	Thru	800		applicable	542	603	519	544	617
	Right	0			0	0	0	0	0
Southbound									0
	Left	0			0	0	0	0	
	Thru	466			347	345	329	313	292
	Right	1			196	87	205	146	30
Eastbound									
	Left	1			80	34	79	63	16
	Thru	1			1	1	1	1	1
	Right	1			197	162	188	185	162
Westbound									
	Left	1			0	0	0	0	0
	Thru	1			1	1	1	1	1
	Right	1			0	0	0	0	0

Intersection:	Gorham Bypass @ Route 202 (west)								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	1		not	225	234	307	210	168
	Thru	1		applicable	352	236	318	348	212
	Right	1			62	18	24	25	16
Southbound									
	Left	1			9	4	4	5	5
	Thru	1			181	127	168	157	117
	Right	1			32	50	49	40	48
Eastbound									
	Left	1			7	15	15	17	16
	Thru	253			257	226	224	242	247
	Right	1			26	37	49	40	30
Westbound									
	Left	1			72	32	50	52	32
	Thru	303			191	190	223	203	195
	Right	1			5	3	4	1	1

Table 5-2 Alternative Intersection Turning Movements
Year 2005 PM Peak Hour (continued)

Intersection:	Gorham Bypass @ Route 25 (west)								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	1		not	341	240	268	353	220
	Thru	1		applicable	1	1	70	1	1
	Right	1			19	14	0	11	7
Southbound		0							
	Left	1			0	0	0	0	0
	Thru	1			1	1	64	1	1
	Right	1			0	0	231	0	0
Eastbound		0							
	Left	1			0	0	165	0	0
	Thru	428			227	277	208	85	123
	Right	1			210	179	173	192	166
Westbound		0							
	Left	1			18	14	0	15	12
	Thru	889			726	797	664	465	560
	Right	1			0	0	0	0	0

Intersection:	Gorham Bypass @ Route 114 (north)								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left			not	not	not	8	97	105
	Thru	529		applicable	applicable	applicable	228	208	218
	Right						18	66	68
Southbound									
	Left						250	151	159
	Thru	391					149	150	148
	Right						6	44	49
Eastbound									
	Left						12	4	4
	Thru						200	274	279
	Right						9	21	20
Westbound									
	Left						29	54	50
	Thru						288	418	435
	Right						383	316	317

Intersection:	Gorham Bypass @ Route 202 (east)								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left			not	not	not	37	41	43
	Thru	226		applicable	applicable	applicable	342	342	339
	Right						5	5	5
Southbound									
	Left						12	19	19
	Thru	208					250	263	269
	Right						93	149	156
Eastbound									
	Left						83	81	84
	Thru						372	407	410
	Right						30	21	22
Westbound									
	Left						6	4	4
	Thru						554	590	593
	Right						16	15	15

Table 5-2 Alternative Intersection Turning Movements
Year 2005 PM Peak Hour (continued)

Intersection:	Gorham Bypass @ Route 25 (east) and Route 237								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Eastbound Route 25									
	to Bypass	0	0	0	1	1	8	9	9
	to Rt 237	18	18	15	21	20	0	0	0
	to Rt 25E	212	206	208	273	270	57	60	57
Southbound Route 237									
	to Rt 25E	139	167	160	175	176	111	106	106
	to Rt 25W	15	17	16	16	16	0	0	0
	to Bypass	0	0	0	1	1	25	25	25
Eastbound Gorham Bypass									
	to Rt 237	0	0	0	1	0	15	15	14
	to Rt 25E	1	1	0	1	0	355	394	397
	to Rt 25W	0	0	0	1	0	8	10	10
Westbound Route 25									
	to Rt 25W	497	522	613	537	543	203	224	227
	to Bypass	1	1	1	1	1	554	586	588
	to Rt 237	533	625	600	602	604	408	352	350

Intersection:	Route 25 @ Libby								
	PM Peak Hour								
		Actual 1999	2005 Base	Upgrade	2005 Alt 1C	2005 Alt 1E	2005 Alt 6B	2005 6C	2005 Alt 6D
Northbound									
	Left	26	58	70	28	46	147	132	146
	Thru	158	215	216	160	208	228	259	279
	Right	11	18	15	12	19	12	12	13
Southbound									
	Left	12	10	7	11	11	3	4	3
	Thru	70	79	77	68	70	76	74	86
	Right	29	33	32	25	27	37	42	38
Eastbound									
	Left	30	25	30	37	29	11	13	13
	Thru	211	207	211	282	268	59	63	59
	Right	18	24	35	27	25	23	18	23
Westbound									
	Left	13	14	16	16	15	5	5	6
	Thru	464	505	594	503	516	201	221	224
	Right	35	23	23	36	29	4	5	5

Table 5-3 Alternative Intersection Turning Movements
Year 2025 AM Peak Hour

Intersection:	Route 25 @ New Portland Road							
	AM Peak Hour							
	Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound								
Left	30	31	27	33	34	25	25	27
Right	25	26	26	28	27	23	23	23
Sharp Right	118	115	118	114	115	125	125	124
Westbound								
Sharp Left	1	1	2	1	1	1	1	1
Left	5	5	5	5	5	4	4	4
Thru	521	590	705	647	631	370	385	393
Eastbound								
Thru	533	602	770	584	569	411	416	419
Soft Right	643	680	899	610	624	573	574	570
Right	2	2	2	2	2	2	2	2
Northwestbound								
Hard Left	26	26	27	27	27	30	29	30
Soft Left	77	90	110	94	98	74	72	77
Right	2	0	0	0	0	0	0	0

Intersection:	Route 25 @ Route 202 East							
	AM Peak Hour							
	Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound								
Left	0	0	0	0	0	0	0	0
Thru	1	1	1	1	1	1	1	1
Right	0	0	0	0	0	0	0	0
Southbound								
Left	55	75	64	66	69	71	69	68
Thru	1	1	1	1	1	1	1	1
Right	202	234	338	274	262	228	250	258
Eastbound								
Left	135	165	232	176	167	138	155	165
Thru	406	443	535	414	405	282	268	262
Right	0	0	0	0	0	0	0	0
Westbound								
Left	0	0	0	0	0	0	0	0
Thru	300	315	310	327	323	128	120	117
Right	32	44	30	39	41	23	23	23

Intersection:	Route 202 @ Cressey Road							
	AM Peak Hour							
	Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound								
Left	0	0	0	0	0	0	0	0
Thru	1	0	0	0	0	0	0	0
Right	0	0	0	0	0	0	0	0
Southbound								
Left	217	263	341	236	225	225	226	222
Thru	1	1	1	1	1	1	1	1
Right	25	46	58	114	51	54	33	36
Eastbound								
Left	26	38	41	35	27	44	22	25
Thru	331	422	463	289	297	305	306	325
Right	0	0	0	0	0	0	0	0
Westbound								
Left	0	0	0	0	0	0	0	0
Thru	156	184	193	211	194	190	207	200
Right	32	35	45	18	25	36	32	29

Table 5-3 Alternative Intersection Turning Movements
Year 2025 AM Peak Hour (continued)

Intersection:		Cressey Road at Flaggy Meadow Road							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	8	11	11	20	17	35	19	21
	Thru	34	42	53	15	18	20	16	17
	Right	2	2	2	0	0	0	1	0
Southbound									
	Left	12	21	18	8	9	9	9	9
	Thru	187	265	326	154	169	181	154	155
	Right	1	5	3	1	1	11	2	3
Eastbound									
	Left	6	12	12	12	9	25	9	17
	Thru	145	207	207	101	85	56	138	150
	Right	43	37	68	242	124	116	117	120
Westbound									
	Left	6	3	9	6	4	1	4	2
	Thru	15	23	26	32	19	28	29	32
	Right	6	8	11	2	2	2	2	2

Intersection:		Route 25 @ Cressey Road							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	43	74	104	26	23	68	23	38
	Thru	1	1	1	1	1	1	1	1
	Right	12	18	17	11	10	18	10	16
Southbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	0	0	0	0	0	0	0	0
	Thru	850	1020	1081	788	868	726	552	606
	Right	150	250	301	121	135	162	122	122
Westbound									
	Left	4	8	7	2	4	2	1	1
	Thru	183	210	214	126	151	58	33	46
	Right	0	0	0	0	0	0	0	0

Intersection:		Route 25 @ Flaggy Meadow Road							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	4	5	5	1	1	0	1	1
	Thru	28	29	29	9	9	6	19	19
	Right	242	286	308	111	107	72	189	202
Southbound									
	Left	1	0	0	0	0	0	0	0
	Thru	1	1	1	2	1	2	3	3
	Right	8	8	7	6	8	4	2	3
Eastbound									
	Left	150	153	154	100	106	101	83	85
	Thru	769	902	973	721	784	664	478	538
	Right	1	1	2	1	1	1	1	1
Westbound									
	Left	80	113	147	132	78	100	119	122
	Thru	152	172	176	106	123	45	25	37
	Right	0	0	0	0	0	0	0	0

Table 5-3 Alternative Intersection Turning Movements
Year 2025 AM Peak Hour (continued)

Intersection:		Route 25 @ Route 202 West							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	8	8	9	6	6	3	3	3
	Thru	13	13	14	14	13	12	15	14
	Right	232	314	430	190	192	196	207	226
Southbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	2	2	2	2	2	2	2	2
	Thru	1010	1134	1340	860	951	795	662	737
	Right	1	1	1	1	1	1	1	1
Westbound									
	Left	216	250	281	257	246	249	258	270
	Thru	194	225	231	153	160	79	59	73
	Right	1	1	1	1	1	1	1	1

Intersection:		Route 114 @ Day Road							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	0	0	0	0	0	0	0	0
	Thru	296	307	341	200	224	185	195	222
	Right	11	4	2	234	33	136	91	8
Southbound									
	Left	87	36	37	54	139	51	43	101
	Thru	789	1029	1027	635	639	618	606	670
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	0	0	0	0	0	0	0	0
	Thru	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0
Westbound									
	Left	1	0	0	4	1	3	3	0
	Thru	1	1	1	1	0	0	0	0
	Right	22	11	8	2	12	3	3	10

Intersection:		New Portland Road @ Libby Avenue/Brackett Street							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	25	26	33	33	39	25	25	26
	Thru	58	78	64	81	85	82	73	71
	Right	34	40	40	84	69	57	57	56
Southbound									
	Left	6	18	15	20	18	30	37	31
	Thru	184	363	369	248	292	358	359	375
	Right	4	11	11	7	9	12	15	13
Eastbound									
	Left	2	3	3	1	2	2	2	2
	Thru	633	713	788	705	684	692	695	687
	Right	99	77	112	49	61	44	36	45
Westbound									
	Left	4	3	4	4	3	3	2	3
	Thru	90	99	124	102	102	95	88	97
	Right	2	3	2	2	2	3	2	3

Table 5-3 Alternative Intersection Turning Movements
Year 2025 AM Peak Hour (continued)

Intersection:	Route 25 @ Route 114 (Gorham Village)								
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	75	87	86	45	50	49	47	52
	Thru	98	109	117	83	98	63	77	84
	Right	112	103	118	96	94	101	90	87
Southbound									
	Left	241	271	312	389	330	152	220	220
	Thru	239	311	281	224	253	150	190	208
	Right	11	15	15	12	12	5	8	8
Eastbound									
	Left	0	0	0	0	0	0	0	0
	Thru	789	862	1166	761	762	641	607	605
	Right	414	523	556	232	310	335	277	386
Westbound									
	Left	146	151	163	135	153	155	119	145
	Thru	369	412	492	405	396	283	267	283
	Right	103	111	144	162	165	79	94	98

Intersection:	Gorham Bypass @ Route 114 (south)								
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	1		not	169	147	173	182	144
	Thru	296		applicable	225	226	205	208	202
	Right	1			0	0	0	0	0
Southbound									
	Left	1			0	0	0	0	0
	Thru	789			577	772	710	704	819
	Right	1			74	24	57	49	18
Eastbound									
	Left	1			118	34	69	53	20
	Thru	1			0	0	0	0	0
	Right	1			627	613	649	608	597
Westbound									
	Left	1			0	0	0	0	0
	Thru	0			1	1	1	1	1
	Right	1			0	0	0	0	0

Intersection:	Gorham Bypass @ Route 202 (west)								
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	1		not	36	31	43	46	31
	Thru	1		applicable	185	132	179	174	124
	Right	1			22	9	9	12	7
Southbound									
	Left	1			2	1	1	2	1
	Thru	1			422	331	307	374	321
	Right	1			3	5	5	6	6
Eastbound									
	Left	1			12	24	30	22	29
	Thru	331			278	295	315	289	319
	Right	1			251	284	379	259	271
Westbound									
	Left	1			71	33	31	28	25
	Thru	156			192	175	174	178	180
	Right	1			3	3	3	2	3

Table 5-3 Alternative Intersection Turning Movements
Year 2025 AM Peak Hour (continued)

Intersection:		Gorham Bypass @ Route 25 (west)							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	1		not	141	140	116	170	137
	Thru	1		applicable	1	0	95	0	0
	Right	1			25	19	0	28	18
Southbound									
	Left	1			0	0	0	0	0
	Thru	1			1	0	15	0	0
	Right	1			0	0	83	0	0
Eastbound									
	Left	1			0	0	217	0	0
	Thru	1000			877	977	882	602	686
	Right	1			506	326	297	376	323
Westbound									
	Left	1			15	11	0	6	5
	Thru	226			148	183	90	40	61
	Right	1			0	0	0	0	0

Intersection:		Gorham Bypass @ Route 114 (north)							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left			not	not	not	7	28	28
	Thru	201		applicable	applicable	applicable	114	115	113
	Right						12	18	18
Southbound									
	Left						399	372	373
	Thru	491					364	433	431
	Right						23	33	33
Eastbound									
	Left						5	8	8
	Thru						295	463	464
	Right						12	54	54
Westbound									
	Left						16	16	17
	Thru						68	176	179
	Right						153	139	140

Intersection:		Gorham Bypass @ Route 202 (east)							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left			not	not	not	23	24	23
	Thru	167		applicable	applicable	applicable	213	243	243
	Right						3	3	3
Southbound									
	Left						15	13	14
	Thru	257					438	460	453
	Right						120	119	109
Eastbound									
	Left						116	157	151
	Thru						536	626	635
	Right						53	69	69
Westbound									
	Left						5	6	6
	Thru						94	189	203
	Right						11	13	14

Table 5-3 Alternative Intersection Turning Movements
Year 2025 AM Peak Hour (continued)

Intersection:		Gorham Bypass @ Route 25 (east)							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Eastbound Route 25									
	to Bypass	1	0	0	0	0	5	6	5
	to Rt 237	8	5	11	9	9	0	0	0
	to Rt 25E	407	435	487	400	399	145	154	120
Southbound Route 237									
	to Rt 25E	451	557	530	572	558	453	432	448
	to Rt 25W	6	3	7	7	7	0	0	0
	to Bypass	1	0	0	0	0	10	10	10
Eastbound Gorham Bypass									
	to Rt 237	1	0	0	0	0	19	19	19
	to Rt 25E	1	0	0	0	0	531	617	627
	to Rt 25W	1	0	0	0	0	5	6	5
Westbound Route 25									
	to Rt 25W	211	207	250	263	267	86	87	85
	to Bypass	1	0	0	0	0	96	193	209
	to Rt 237	79	129	117	126	126	73	69	71

Intersection:		Route 25 @ Libby							
	AM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	12	15	19	23	17	13	10	13
	Thru	25	33	33	35	34	42	41	41
	Right	9	10	12	12	11	7	7	5
Southbound									
	Left	70	64	54	53	68	10	15	9
	Thru	138	312	301	248	278	284	336	331
	Right	21	21	19	24	25	4	5	5
Eastbound									
	Left	8	10	10	9	9	7	7	8
	Thru	365	378	450	362	360	136	143	113
	Right	27	69	94	63	55	144	122	122
Westbound									
	Left	10	21	27	20	21	32	32	29
	Thru	227	206	257	281	279	70	73	75
	Right	3	0	0	0	0	0	0	0

Table 5-4 Alternative Intersection Turning Movements
Year 2025 PM Peak Hour

Intersection:		Route 25 @ New Portland Road							
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 Alt 6C	2025 Alt 6D
Northbound									
	Left	43	42	40	39	40	37	37	38
	Right	44	43	44	46	44	38	39	38
	Sharp Right	82	84	86	84	85	94	93	93
Westbound									
	Sharp Left	0	0	0	0	0	0	0	0
	Left	21	22	22	23	22	19	19	20
	Thru	732	827	1057	802	781	564	571	576
Eastbound									
	Thru	436	494	590	541	528	309	322	329
	Soft Right	230	269	329	281	292	220	215	230
	Right	3	3	3	3	3	3	3	3
Northwestbound									
	Hard Left	50	49	50	48	49	53	53	52
	Soft Left	384	406	537	364	373	342	343	341
	Right	2	2	3	2	2	2	2	2

Intersection:		Route 25 @ Route 202 East							
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Southbound									
	Left	23	32	22	28	30	17	16	17
	Thru	1	1	1	1	1	1	1	1
	Right	185	226	318	242	228	189	213	226
Eastbound									
	Left	191	221	319	259	248	215	237	244
	Thru	296	311	306	322	319	126	118	116
	Right	0	0	0	0	0	0	0	0
Westbound									
	Left	0	0	0	0	0	0	0	0
	Thru	571	623	752	582	569	396	376	368
	Right	35	48	41	42	44	45	44	43

Intersection:		Route 202 @ Cressey Road							
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	0	0	0	0	0	0	0	0
	Thru	1	1	1	1	1	1	1	1
	Right	0	0	0	0	0	0	0	0
Southbound									
	Left	20	22	28	11	15	23	20	18
	Thru	1	1	1	1	1	1	1	1
	Right	23	33	37	31	24	39	19	22
Eastbound									
	Left	28	51	65	127	57	61	37	40
	Thru	225	265	279	304	280	274	299	289
	Right	0	0	0	0	0	0	0	0
Westbound									
	Left	0	0	0	0	0	0	0	0
	Thru	280	357	392	244	251	258	259	275
	Right	93	139	217	112	101	101	102	98

Table 5-4 Alternative Intersection Turning Movements
Year 2025 PM Peak Hour (continued)

Intersection:	Cressey Road at Flaggy Meadow Road								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	33	29	53	185	95	89	90	92
	Thru	78	156	217	45	60	72	45	46
	Right	9	5	14	10	6	1	6	4
Southbound									
	Left	6	8	11	2	2	2	2	2
	Thru	32	40	50	14	17	19	15	16
	Right	11	23	22	21	16	47	17	31
Eastbound									
	Left	2	11	6	2	3	21	3	6
	Thru	60	93	103	127	77	113	115	126
	Right	11	16	16	28	23	48	26	28
Westbound									
	Left	1	1	1	0	0	0	0	0
	Thru	123	175	176	86	72	47	117	127
	Right	4	13	10	0	1	1	1	1

Intersection:	Route 25 @ Cressey Road							
PM Peak Hour								
	Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound								
Left	66	166	217	37	51	78	38	38
Thru	1	1	1	1	1	1	1	1
Right	2	4	4	1	2	1	0	1
Southbound								
Left	0	0	0	0	0	0	0	0
Thru	1	1	1	1	1	1	1	1
Right	0	0	0	0	0	0	0	0
Eastbound								
Left	0	0	0	0	0	0	0	0
Thru	407	468	475	279	336	129	74	101
Right	21	36	51	13	11	33	11	19
Westbound								
Left	16	24	23	14	13	24	13	21
Thru	823	988	1046	763	840	703	535	587
Right	0	0	0	0	0	0	0	0

Intersection:	Route 25 @ Flaggy Meadow Road							
PM Peak Hour								
	Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound								
Left	2	3	4	3	2	2	2	2
Thru	8	10	11	14	9	18	23	21
Right	44	62	81	72	43	55	65	67
Southbound								
Left	23	23	22	19	19	20	19	19
Thru	21	22	22	7	6	5	15	14
Right	74	75	76	49	52	50	41	42
Eastbound								
Left	21	20	19	16	20	11	7	9
Thru	384	435	446	267	310	115	62	92
Right	1	1	1	0	0	0	0	0
Westbound								
Left	136	161	173	62	60	40	106	113
Thru	767	899	970	719	782	662	477	537
Right	0	0	0	0	0	0	0	0

Table 5-4 Alternative Intersection Turning Movements
Year 2025 PM Peak Hour (continued)

Intersection:	Route 25 @ Route 202 West								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	10	8	9	13	12	8	9	9
	Thru	26	27	27	32	31	30	32	31
	Right	216	250	281	257	246	249	258	270
Southbound									
	Left	7	8	8	7	8	8	7	8
	Thru	6	6	6	6	6	6	7	6
	Right	1	1	1	1	1	1	1	1
Eastbound									
	Left	1	1	1	1	1	0	0	0
	Thru	434	504	516	342	359	177	132	164
	Right	6	6	7	5	4	2	2	2
Westbound									
	Left	291	394	539	238	241	246	260	283
	Thru	886	995	1176	754	834	698	580	646
	Right	8	11	12	7	8	9	7	8

Intersection:	Route 114 @ Day Road								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	0	0	0	0	0	1	1	0
	Thru	794	1035	1034	639	643	622	610	674
	Right	6	3	1	23	7	20	18	2
Southbound									
	Left	27	13	10	3	15	3	4	12
	Thru	456	474	525	308	345	285	301	342
	Right	0	0	0	0	0	0	0	0
Eastbound									
	Left	0	0	0	0	0	0	0	1
	Thru	1	1	1	1	0	0	0	0
	Right	0	0	0	0	0	1	1	0
Westbound									
	Left	10	3	2	212	30	124	83	7
	Thru	1	1	1	1	1	0	0	0
	Right	111	46	47	69	178	65	55	129

Intersection:	New Portland Road @ Libby Avenue/Brackett Street								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	65	51	74	32	40	29	24	29
	Thru	165	326	331	223	262	321	322	336
	Right	11	9	11	10	9	7	6	7
Southbound									
	Left	5	7	6	6	5	7	6	6
	Thru	97	130	107	136	142	137	122	119
	Right	16	22	21	11	13	16	14	14
Eastbound									
	Left	6	16	17	10	13	18	22	20
	Thru	258	284	355	293	293	271	253	278
	Right	38	40	50	49	59	39	38	40
Westbound									
	Left	28	33	33	70	57	47	47	46
	Thru	366	446	521	438	417	425	428	420
	Right	22	68	55	72	64	112	137	114

Table 5-4 Alternative Intersection Turning Movements
Year 2025 PM Peak Hour (continued)

Intersection:	Route 25 @ Route 114 (Gorham Village)								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	359	453	482	201	269	291	240	334
	Thru	381	496	447	357	404	240	302	331
	Right	102	105	114	94	107	109	83	102
Southbound									
	Left	153	165	214	240	245	117	140	146
	Thru	194	217	233	165	193	125	152	166
	Right	44	58	74	42	50	26	33	32
Eastbound									
	Left	19	27	27	21	21	9	13	13
	Thru	477	533	636	524	513	366	345	366
	Right	217	250	248	129	145	140	135	149
Westbound									
	Left	103	95	109	89	86	93	83	80
	Thru	855	935	1263	824	826	695	658	656
	Right	129	145	167	208	176	81	118	118

Intersection:	Gorham Bypass @ Route 114 (south)								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	1		not	636	622	658	616	605
	Thru	800		applicable	585	783	720	714	830
	Right	0			0	0	0	0	0
Southbound									
	Left	0			0	0	0	0	0
	Thru	466			354	356	323	327	317
	Right	1			185	53	108	84	32
Eastbound									
	Left	1			75	24	58	50	18
	Thru	1			1	1	1	1	1
	Right	1			266	231	273	286	227
Westbound									
	Left	1			0	0	0	0	0
	Thru	1			1	1	1	1	1
	Right	1			0	0	0	0	0

Intersection:	Gorham Bypass @ Route 202 (west)								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	1		not	230	260	347	237	248
	Thru	1		applicable	479	359	366	417	342
	Right	1			115	53	51	46	40
Southbound									
	Left	1			5	4	4	4	4
	Thru	1			258	199	253	250	190
	Right	1			11	22	28	20	27
Eastbound									
	Left	1			5	8	8	10	10
	Thru	253			312	284	282	289	291
	Right	1			59	50	69	75	51
Westbound									
	Left	1			20	8	9	11	7
	Thru	303			254	270	288	264	292
	Right	1			2	1	1	2	1

Table 5-4 Alternative Intersection Turning Movements
Year 2025 PM Peak Hour (continued)

Intersection:	Gorham Bypass @ Route 25 (west)								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	1		not	450	342	291	412	339
	Thru	1		applicable	1	1	82	1	1
	Right	1			28	21	0	12	10
Southbound		0							
	Left	1			0	0	0	0	0
	Thru	1			1	1	76	1	1
	Right	1			0	0	193	0	0
Eastbound		0							
	Left	1			0	0	157	0	0
	Thru	428			280	346	171	76	116
	Right	1			267	220	220	257	215
Westbound		0							
	Left	1			22	16	0	24	16
	Thru	889			780	869	784	535	610
	Right	1			0	0	0	0	0

Intersection:	Gorham Bypass @ Route 114 (north)								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left			not	not	not	13	58	58
	Thru	529		applicable	applicable	applicable	392	467	464
	Right						18	18	18
Southbound									
	Left						297	271	272
	Thru	391					221	224	220
	Right						11	15	15
Eastbound									
	Left						25	36	35
	Thru						242	291	291
	Right						14	55	54
Westbound									
	Left						24	35	35
	Thru						295	593	602
	Right						430	225	225

Intersection:	Gorham Bypass @ Route 202 (east)								
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left			not	not	not	47	61	60
	Thru	226		applicable	applicable	applicable	385	404	398
	Right						5	5	5
Southbound									
	Left						14	16	17
	Thru	208					265	303	303
	Right						145	196	188
Eastbound									
	Left						106	105	96
	Thru						404	423	425
	Right						29	30	29
Westbound									
	Left						4	3	4
	Thru						526	565	581
	Right						13	12	12

Table 5-4 Alternative Intersection Turning Movements
Year 2025 PM Peak Hour (continued)

Intersection:		Gorham Bypass @ Route 25 (east) and Route 237							
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Eastbound Route 25									
	to Bypass	0	0	0	1	1	16	17	16
	to Rt 237	18	8	20	20	21	1	1	1
	to Rt 25E	212	208	251	264	268	87	87	85
Southbound Route 237									
	to Rt 25E	139	227	207	222	222	128	122	124
	to Rt 25W	15	10	21	17	17	0	0	0
	to Bypass	0	0	0	1	1	35	36	36
Eastbound Gorham Bypass									
	to Rt 237	0	0	0	1	0	29	29	29
	to Rt 25E	1	1	0	1	0	373	391	398
	to Rt 25W	0	0	0	1	0	10	12	9
Westbound Route 25									
	to Rt 25W	497	531	594	488	487	177	189	146
	to Bypass	1	1	1	1	1	498	533	549
	to Rt 237	533	658	627	676	660	535	510	529

Intersection:		Route 25 @ Libby							
	PM Peak Hour								
		Actual 1999	2025 Base	Upgrade	2025 Alt 1C	2025 Alt 1E	2025 Alt 6B	2025 6C	2025 Alt 6D
Northbound									
	Left	26	66	91	61	53	139	117	117
	Thru	158	357	345	284	318	325	384	379
	Right	11	23	29	22	23	36	35	32
Southbound									
	Left	12	12	12	11	14	6	8	6
	Thru	70	93	94	99	96	117	115	115
	Right	29	35	37	31	34	24	26	27
Eastbound									
	Left	30	30	28	34	35	6	7	8
	Thru	211	192	239	261	259	65	67	70
	Right	18	23	28	35	25	19	15	20
Westbound									
	Left	13	15	17	17	15	10	9	7
	Thru	464	480	572	461	457	172	181	144
	Right	35	32	27	27	34	5	7	4

This Page Intentionally Left Blank

6.0 Final Alignment Alternatives

6.0 Introduction

In Chapter 4, Alignment Alternatives Screening, information was presented describing the studies undertaken to identify, evaluate, and screen a number of different bypass alternatives. This chapter describes in detail the five build bypass alternatives retained for final evaluation along with the No-Build Alternative.

The five build alternatives, illustrated together on Figure 6-1, page 6-2 are:

- Alternative 1c: A two-lane bypass southwest of Gorham Village (Village) connecting Route 114 just south of Day Road to Route 25, west of Cressey Road.
- Alternative 1e: A two-lane bypass southwest of the Village connecting Route 114 just south of Waterhouse Road to Route 25, west of Cressey Road.
- Alternative 6b: A two-lane, southwest bypass of the Village connecting Route 114, just south of Day Road to Route 25 west of Cressey Road, continuing as a northerly bypass of the Village to the Route 25 - Route 237 intersection, also known as Mosher Corner.
- Alternative 6c: A two-lane, southwest bypass of the Village connecting Route 114 just south of Day Road to Route 25 west of Cressey Road, and a separated northerly bypass of the Village connecting Route 25 near West Gorham to Route 25 at Mosher Corner.
- Alternative 6d: A two-lane, southwest bypass of the Village connecting Route 114 just south of Waterhouse Road to Route 25 west of Cressey Road, and a separated northerly bypass of the Village connecting Route 25 near West Gorham to Route 25 at Mosher Corner.

6.1 Basic Design Parameters

The final alternatives were designed in accordance with the Rural Arterial geometric design criteria, as established by the Maine Department of Transportation's (MDOT) Highway Design Guide and the American Association of State Highway and Transportation Officials (AASHTO) Standards. Bypass alternatives were designed for 55 mph (90km/hr), with limited access control, i.e. access permitted only at U.S. or state numbered routes.

6.1.1. Typical Cross Sections

The typical cross section for the bypass alternatives consists of two 3.6 m (12 ft.) travel lanes (one in each direction) and two 2.4 m (8 ft.) paved shoulders, for a total pavement width of 12 m (40 ft.). In areas warranted, an additional 3.6m (12 ft.) truck climbing lane with a 1.2 m (4 ft.) paved shoulder in place of the typical 2.4 m (8 ft.) paved shoulder is provided. In accordance with MDOT guidelines, the typical highway right-of-way would be 61 m (200 ft.) wide.

This Page Intentionally Left Blank

The typical road embankment would include either cut or fill conditions designed in accordance with MDOT design standards. Ditch conditions in cut sections would have a front slope of 4:1 that would terminate at the required clear zone distance and then transition into a 2:1 back slope. Fill conditions would have 4:1 slopes for fill heights up to 4.5 m (15 ft.). For fill heights over 4.5 m (15 ft.), a slope of 2:1 with guardrail would be used. In areas where guardrail is required, an additional 1.5 m (5 ft.) would be added onto the 2.4 m (8 ft.) paved shoulder for a total of 3.9 m (13 ft.). This extra width allows a 0.6 m (2 ft.) offset to the face of guardrail as well as 0.9 m (3 ft.) of additional shoulder to accommodate the guardrail itself.

6.1.2. Crossings

The five bypass alternatives would intersect or cross the following roads in some way: Route 114 north & south of Gorham Village (Village), Route 202/4 northeast & southwest of the Village, Weeks Road, Flaggy Meadow Road, Libby Avenue, and Route 25, east and west of the Village. Access to the bypass would only be provided at U.S. and state numbered routes.

Proposed intersections with Routes 114, 202/4, and 25 would be at-grade and signalized. The Flaggy Meadow Road, Libby Avenue, and Weeks Road crossings would be grade separated with no access to the new bypass.

6.1.3. Intersection Configurations

The majority of the at-grade signalized intersections were configured for either a 3-way "T" intersection or a 4-way intersection. All alternatives would require similar intersection configurations, unless otherwise noted. The intersection lane requirements for the alternatives are discussed below.

Bypass intersection with Route 114, south of the Village: The following intersection lane configuration would be provided under all five build alternatives.

- Eastbound approach on the bypass: a dedicated left turn and a dedicated right turn lane;
- Northbound approach on Route 114: a dedicated left turn land and a dedicated through lane;
- Southbound approach on Route 114: a single right turn/though lane.
- All exit legs of the intersection would be single lane except for the southbound leg, which would have two lanes to allow for free flowing movements from the bypass to Route 114, south.

Bypass intersection with Route 202/4, west of the Village: The following intersection lane configuration would be provided under all five build alternatives:

- Eastbound approach on Route 202/4: a single right turn/through lane and a dedicated left turn lane;
- Westbound approach on Route 202/4: a single right turn/through lane and a dedicated left turn lane;
- Northbound approach on the bypass: a single right turn/through lane and a dedicated left turn lane;

- Southbound approach on the bypass: a dedicated lane for each movement (left, through, and right);
- All exit legs of the intersection would be single lane.

Bypass intersection with Route 25, west of the Village: The following intersection lane configuration would be provided under Alternatives 1c, and 1e:

- Eastbound approach on Route 25: a dedicated right turn lane, a dedicated through lane.
- Westbound approach on Route 25: a combined left/through lane.
- Northbound approach on the bypass: a dedicated left turn lane, a dedicated right turn lane.
- All exit legs would be one lane.
- Cressey Road would be dead-ended at Route 25 and US Route 202.

The following intersection lane configuration would be provided under Alternative 6b:

- Eastbound approach on Route 25: a dedicated right turn lane, and a shared through/left turn lane.
- Westbound approach on Route 25: a shared left/through/right turn lane.
- Northbound approach on bypass: a dedicated left turn lane, and a shared through/right turn lane.
- All exit legs would be one lane.
- Cressey Road would be dead-ended at Route 25 and US Route 202.

Southwesterly Bypass intersection with Route 25, west of the Village: The following intersection lane configuration would be provided under Alternatives 6c and 6d:

- Eastbound approach on Route 25: a dedicated left turn lane onto Route 25, and a dedicated through lane to continue on the bypass.
- Westbound approach on Route 25: a dedicated right turn lane to continue onto Route 25, and a dedicated left turn lane onto the bypass.
- Northbound approach on the bypass: a dedicated through lane onto Route 25 westbound, and a dedicated right turn lane onto Route 25 eastbound.
- The southern section of Cressey Road would be dead-ended at Route 25;
- Exit legs would be one lane each.

Northerly Bypass intersection with Route 25, west of the Village: The following intersection lane configuration would be provided under Alternatives 6c and 6d:

- Eastbound approach on Route 25: dedicated left turn lane/dedicated through lane;
- Westbound approach on Route 25: dedicated right turn lane/dedicated through lane;
- The southern approach on the bypass would be a dedicated left turn lane/dedicated right turn lane;
- All exit legs would be one lane.

Bypass intersection with Route 114, north of the Village: The following intersection lane configuration would be provided under Alternatives 6b, 6c and 6d:

- Eastbound approach on the bypass: a shared left through/right turn lane.
- Westbound approach on the bypass: a shared left through turn lane and a dedicated right turn lane;
- Northbound approach on Route 114: dedicated left turn lanes, and a shared through/right turn lane;
- Southbound approach on Route 114: a dedicated left turn lane, and a shared through/right turn lane;
- The exit legs would be one lane each.

Bypass intersection with Route 202/4, northeast of the Village: The following intersection lane configuration would be provided under Alternatives 6b, 6c and 6d:

- Eastbound approach on the bypass: a shared left/through/right turn lane;
- Westbound approach on the bypass: a shared left/through/right turn lane;
- Northbound approach on Route 202/4: a shared left/through/right turn lane;
- Southbound approach on Route 202/4: a shared left/through/right turn lane;
- The northbound and southbound exit legs would be two lanes each;
- The eastbound and westbound exit legs would be one lane each.

Bypass intersection with Route 25/237, east of the Village (Mosher Corner): This intersection would be 4-way intersection, reconfigured to provide for direct movements between Route 25 east and the bypass. The following intersection lane configuration would be provided under all Alternatives 6b, 6c and 6d:

- Northbound approach on Route 25: a shared left/through lane, and a dedicated right turn lane to continue to Route 25;
- Southbound approach on Route 237: a dedicated left turn lane, and a shared through/right turn lane;
- Eastbound approach on the bypass: a dedicated left turn lane, and a shared through/right turn lane;
- Westbound approach on Route 25: a dedicated right, through and left turn lane.

6.2 ALTERNATIVES ANALYZED

6.2.1. No-Build Alternative

The No-Build alternative would provide no new highway construction or major, capacity-adding reconstruction, except for the previously planned projects listed in Section 5.2. The present level of maintenance in the study area would continue and could include resurfacing, signal improvements, traffic lane marking, signing, shoulder and drainage improvements, and other related activities.

Currently, a third traffic signal is proposed and approved for Route 25 between Route 114 and New Portland Road. This traffic signal will be installed at the entrance to Hannaford Brothers Supermarket. This third traffic signal was incorporated into the alternative alignment analysis of Village intersections.

Without new construction, there would be no noticeable change to the current roadway network and existing traffic operating conditions. Consequently, there would be no

improvement in safety, traffic speeds, roadway capacity, noise, vibration, or impacts experience within Gorham Village or the Study Area. Should the existing problems not be corrected, and traffic volumes continue to increase, the negative impacts are expected to substantially worsen over time.

6.2.2. Alternative 1c

Alternative 1c would construct a 3.99 km (2.48 mile) bypass southwest of Gorham Village, connecting Route 114 south of the Village to Route 25 west of the Village.

Beginning on Route 114 approximately 180 m (600 ft.) south of Day Road, the new bypass would extend 1,130 m (3,700 ft.) along a curve sweeping to the north to the Weeks Road crossing. Weeks Road would be redesigned to bridge over the new roadway. The new bypass would continue under Weeks Road, cross an existing stream (Gully Brook) just west of Weeks Road, and continue northerly approximately 1,220 m (4,000 ft.) where it would connect to Route 202/4, approximately 1.6 km (one mile) west of Gorham Village. This intersection, located approximately 75 m (250 ft.) east of Briarwood Lane, would be at-grade and signalized.

From Route 202/4, the bypass would extend 800 m (2,600 ft.) to the north, parallel to and west of Cressey Road, to the Flaggy Meadow Road crossing. Flaggy Meadow Road would be redesigned to bridge over the bypass. The bypass would extend under Flaggy Meadow Road and continue north, parallel to and west of Cressey Road for a distance of approximately 520 m (1,700 ft.) where it would connect with Route 25, approximately 1.6 km (one mile) west of Gorham Village. This intersection, located approximately 150 m (480 ft.) west of Cressey Road, would be at-grade and signalized.

The existing topography along this alternative is described as rolling. The proposed vertical alignment, with grades varying from 0.5% to 3%, would generally follow the existing ground. The vertical alignment would result in areas of minor cuts and fills, with the exception of a major fill condition between Flaggy Meadow Road and Route 25.

6.2.3. Alternative 1e

Alternative 1e would construct a 5.36 km (3.33 mile) bypass southwest of Gorham Village, connecting Route 114 south of the Village to Route 25 west of the Village.

Beginning on Route 114 approximately 430 m (1,400 ft.) south of Waterhouse Road, the new bypass would extend west, parallel to and south of Waterhouse Road, then sweep to the north, cross two existing streams (Gully Brook and unnamed tributary to Gully Brook), and continue northerly for a total distance of 3,960 m (13,000 ft.) where it would connect to Route 202/4, approximately 1.6 km (one mile) west of Gorham Village. This intersection, located approximately 90 m (300 ft.) east of Briarwood Lane, would be at-grade and signalized.

From Route 202/4 to Route 25, Alternative 1e would be the same alignment as Alternative 1c. The bypass would extend 800 m (2,600 ft.) to the north, parallel to and west of Cressey Road, to the Flaggy Meadow Road crossing. Flaggy Meadow Road would be redesigned to bridge over the bypass. The bypass would extend under Flaggy Meadow Road and continue north, parallel to and west of Cressey Road for a distance of approximately 520 m (1,700 ft.) where it would connect with Route 25, approximately

1.6 km (one mile) west of Gorham Village. This intersection, located approximately 150 m (480 ft.) west of Cressey Road, would be at-grade and signalized.

The existing topography along this alternative is described as rolling to mountainous. The proposed vertical alignment, with grades varying from 0.5% to 4.5%, would generally follow the existing ground. The vertical alignment would result in areas of minor cuts and fills, with the exception of a major fill condition between Flaggy Meadow Road and Route 25.

6.2.4. Alternative 6b

Alternative 6b would construct a 10.54 km (6.55 mile) bypass north and southwest of Gorham Village, connecting Route 114 south of the Village to Route 25 west and east of the Village.

The southwest portion of this alternative, from Route 114 south of the Village to Route 25 west of the Village would be on a similar alignment to Alternative 1c. Beginning on Route 114 approximately 180 m (600 ft.) south of Day Road, the new bypass would extend 1,130 m (3,700 ft.) along a curve sweeping to the north to the Weeks Road crossing. The bypass would bridge over Weeks Road, cross an existing stream (Gully Brook) just west of Weeks Road, and continue northerly approximately 1220 m (4,000 ft.) where it would connect to Route 202/4, approximately 1.6 km (one mile) west of the Village. This intersection, located approximately 75 m (250 ft.) east of Briarwood Lane, would be at-grade and signalized.

From Route 202/4, the bypass would extend 800 m (2,600 ft.) to the north, parallel to and west of Cressey Road, to the Flaggy Meadow Road crossing. Flaggy Meadow Road would be redesigned to bridge over the bypass. The bypass would extend under Flaggy Meadow Road and continue north, parallel to and west of Cressey Road for a distance of approximately 520 m (1,700 ft.) where it would connect with Route 25 approximately 1.6 km (one mile) west of Gorham Village. This intersection, located approximately 150 m (480 ft.) west of Cressey Road, would be at-grade and signalized.

From Route 25, the bypass would extend 2,010 m (6,600 ft.) along a curve sweeping to the east, where it would connect with Route 114, approximately 1.6 km (one mile) north of the Village. This intersection, located approximately 290 m (940 ft.) north of Lovers Lane, would be at-grade and signalized.

From Route 114, the bypass would extend 1,830 m (6,000 ft.) to the east, cross an existing stream (Tannery Brook), and connect to Route 202/4, approximately 1.6 km (one mile) east of Gorham Village. This intersection, located approximately 650 m (2,120 ft.) south of Libby Avenue, would be at-grade and signalized.

From Route 202/4, the bypass would extend easterly, cross Libby Avenue, sweep north of the Gateway Commons residential subdivision, cross an existing stream (unnamed tributary to Mosher Brook), and continue southeast, where it would connect to the Route 25 -Route 237 intersection (Mosher Corner). The total distance for this segment would be 2,380 m (7,800 ft.). The reconfigured Mosher Corner intersection would be at-grade and signalized.

The existing topography along this alternative is described as rolling to mountainous. The proposed vertical alignment, with grades varying from 0.5% to 3%, would generally follow the existing ground. The vertical alignment would result in areas of minor cuts and fills, with the exception of a major fill condition between Flaggy Meadow Road and Route 25 and a major cut condition just north of the Route 25 - Cressey Road intersection.

6.2.5. Alternative 6c

Alternative 6c would construct a 12.18 km (7.57 mile) separated bypass north and southwest of Gorham Village, connecting Route 114 south of the Village to Route 25 west and east of the Village.

The southwest portion of this alternative, from Route 114 south of the Village to Route 25 west of the Village would be on the same alignment as Alternative 1c, except for the configuration of its intersection with Route 25. Beginning on Route 114 approximately 180 m (600 ft.) south of Day Road, the new bypass would extend 1130 m (3,700 ft.) along a curve sweeping to the north to the Weeks Road crossing. Weeks Road would be redesigned to bridge over the new bypass. The bypass would continue under Weeks Road, cross an existing stream (Gully Brook) just west of Weeks Road, and continue northerly approximately 1220 m (4,000 ft.) where it would connect to Route 202/4, west of the Village. This intersection, located approximately 75 m (250 ft.) east of Briarwood Lane, would be at-grade and signalized.

From Route 202/4, the bypass would extend 800 m (2,600 ft.) to the north, parallel to and west of Cressey Road, to the Flaggy Meadow Road crossing. Flaggy Meadow Road would be redesigned to bridge over the bypass. The bypass would extend under Flaggy Meadow Road and continue north, parallel to and west of Cressey Road for a distance of approximately 730 m (2,400 ft.). From this point the bypass would sweep to the west, where it would connect with Route 25 approximately 1.6 km (one mile) west of Gorham Village. This reconfigured intersection, located approximately 340 m (1,100 ft.) west of Cressey Road, would realign traffic movements between the bypass and the westerly leg of Route 25 as direct movements. The easterly leg of Route 25 would be realigned to form the stem of a new signalized, at-grade "T", intersection.

The northern portion of this alternative would be separate from the southwest portion, and the portions would not be directly connected. Beginning on Route 25, approximately 170 m (570 ft.) east of Rust Road, the new bypass would extend 490 m (1,600 ft.) along a curve sweeping to the northeast, where it would connect with a realigned segment of Route 25. Traffic movements between the bypass and the westerly leg of Route 25 would be realigned as direct movements. The easterly leg of Route 25 would be realigned to form the stem of a new signalized, at-grade "T", intersection.

From the Route 25 intersection, the bypass would extend 2900 m (9,500 ft.) along a curve sweeping to the northeast, bridge over an existing stream (Libby River), continue east, parallel to and north of Lovers Lane, where it would connect with Route 114, approximately 1.6 km (one mile) north of Gorham Village. This intersection, located approximately 290 m (940 ft.) north of Lovers Lane, would be at-grade and signalized.

Toward the east, the remaining segments of this alternative, from Route 114 to the Route 25 -Route 237 intersection, would be on the same alignment as Alternative 6b.

From Route 114, the bypass would extend 1830 m (6,000 ft.) to the east, cross an existing stream (Tannery Brook), and connect to Route 202/4, east of the Village. This intersection, located approximately 650 m (2,120 ft.) south of Libby Avenue, would be at-grade and signalized.

From Route 202/4, the bypass would extend easterly, cross Libby Avenue, sweep north of the Gateway Commons residential subdivision, cross an existing stream (unnamed tributary to Mosher Brook), and continue southeast, where it would connect to the Route 25 -Route 237 intersection (Mosher Corner). The total distance for this segment would be 2380 m (7,800 ft.). The reconfigured Mosher Corner intersection would be at-grade and signalized.

The existing topography along this alternative is described as rolling to mountainous. The proposed vertical alignment, with grades varying from 0.5% to 4%, would generally follow the existing ground. The vertical alignment would result in areas of minor cuts and fills, with the exception of major fill conditions between Flaggy Meadow Road & Route 25, and two stream crossings along the northern section.

6.2.6. Alternative 6d

Alternative 6c would construct a 13.55 km (8.42 mile) separated bypass north and southwest of Gorham Village, connecting Route 114 south of the Village to Route 25 west and east of the Village.

The southwest portion of this alternative, from Route 114 south of the Village to Route 25 west of the Village would be on the same alignment as Alternative 1e, except for the configuration of its intersection with Route 25. Beginning on Route 114 approximately 430 m (1,400 ft.) south of Waterhouse Road, the new bypass would extend west, parallel to and south of Waterhouse Road, then sweep to the north, cross two existing streams (Gully Brook and unnamed tributary to Gully Brook), and continue northerly for a total distance of 3,960 m (13,000 ft.) where it would connect to Route 202/4, approximately 1.6 km (one mile) west of Gorham Village. This intersection, located approximately 90 m (300 ft.) east of Briarwood Lane, would be at-grade and signalized.

The bypass would extend 800 m (2,600 ft.) to the north, parallel to and west of Cressey Road, to the Flaggy Meadow Road crossing. Flaggy Meadow Road would be redesigned to bridge over the bypass. The bypass would extend under Flaggy Meadow Road and continue north, parallel to and west of Cressey Road for a distance of approximately 520 m (1,700 ft.) where it would connect with Route 25, approximately 1.6 km (one mile) west of Gorham Village. This intersection, located approximately 150 m (480 ft.) west of Cressey Road, would be at-grade and signalized.

The northern portion of this alternative would be separate from the southwest portion, and the portions would not be directly connected. Beginning on Route 25, approximately 170 m (570 ft.) east of Rust Road, the new bypass would extend 490 m (1,600 ft.) along a curve sweeping to the northeast, where it would connect with a realigned segment of Route 25. Traffic movements between the bypass and the westerly leg of Route 25 would be realigned as direct movements. The easterly leg of Route 25 would be realigned to form the stem of a new signalized, at-grade "T", intersection.

From the Route 25 intersection, the bypass would extend 2900 m (9,500 ft.) along a curve sweeping to the northeast, bridge over an existing stream (Libby River), continue east, parallel to and north of Lovers Lane, where it would connect with Route 114, approximately 1.6 km (one mile) north of Gorham Village. This intersection, located approximately 290 m (940 ft.) north of Lovers Lane, would be at-grade and signalized.

Toward the east, the remaining segments of this alternative, from Route 114 to the Route 25 -Route 237 intersection, would be on the same alignment as Alternative 6b. From Route 114, the bypass would extend 1830 m (6,000 ft.) to the east, cross an existing stream (Tannery Brook), and connect to Route 202/4, east of the Village. This intersection, located approximately 650 m (2,120 ft.) south of Libby Avenue, would be at-grade and signalized.

From Route 202/4, the bypass would extend easterly, cross Libby Avenue, sweep north of the Gateway Commons residential subdivision, cross an existing stream (unnamed tributary to Mosher Brook), and continue southeast, where it would connect to the Route 25 -Route 237 intersection (Mosher Corner). The total distance for this segment would be 2380 m (7,800 ft.). The reconfigured Mosher Corner intersection would be at-grade and signalized.

The existing topography along this alternative is described as rolling to mountainous. The proposed vertical alignment, with grades varying from 0.5% to 4%, would generally follow the existing ground. The vertical alignment would result in areas of minor cuts and fills, with the exception of major fill conditions between Flaggy Meadow Road & Route 25, and two stream crossings along the northern section.

7. Transportation Effects

The transportation measures of effectiveness used for analysis of the no-build and build bypass alternatives include: traffic volumes and diversion from Gorham Village, Level of Service, vehicle delay, vehicle-miles/vehicle-hours traveled, and crash reduction. The measures of effectiveness for each build alternative are compared to the No-Build Alternative and to each other.

The effects on vehicle delay are determined largely by the changes in traffic volumes and the capacities of the affected roads and intersections. Changes in the number of vehicle-miles and vehicle-hours traveled are determined by travel route and by the distances or time saved (or not saved) by motorists diverting to new bypass alternatives. Estimates of crash reductions are based on changes in traffic volumes and differences in road characteristics.

Forecasts developed for year 2005 and 2025 AM and PM peak hour conditions (see Chapter 5) were used in evaluating the transportation effects of the alternatives.

7.1 Traffic Volumes

7.1.1 Usage of the Bypass Alternatives

Figure 7-1, below, and Figure 7-2, page 7-2, respectively show the estimated year 2005 and year 2025 PM peak hour usage of the bypass alternatives on their busiest segment. The usage of the bypass is one indicator of the effectiveness of a particular alternative in diverting traffic away from Gorham Village and other competing routes. In the year 2005, the usage ranges from 680 vehicles per hour (Alternative 1e) to 1,300 vehicles per hour (Alternative 6d). Alternatives 6b, 6c, and 6d carry much heavier volumes of traffic than Alternatives 1c and 1e because they service multiple travel desires in the Study Area. In year 2025, the usage ranges from 930 vehicles per hour for Alternative 1e to 1,440 vehicles per hour for Alternative 6d. Alternatives 6b, 6c and 6d carry the heaviest traffic volume because they would service multiple travel desires.

Figure 7-1 - Usage of the Bypass - 2005 PM Peak Hour

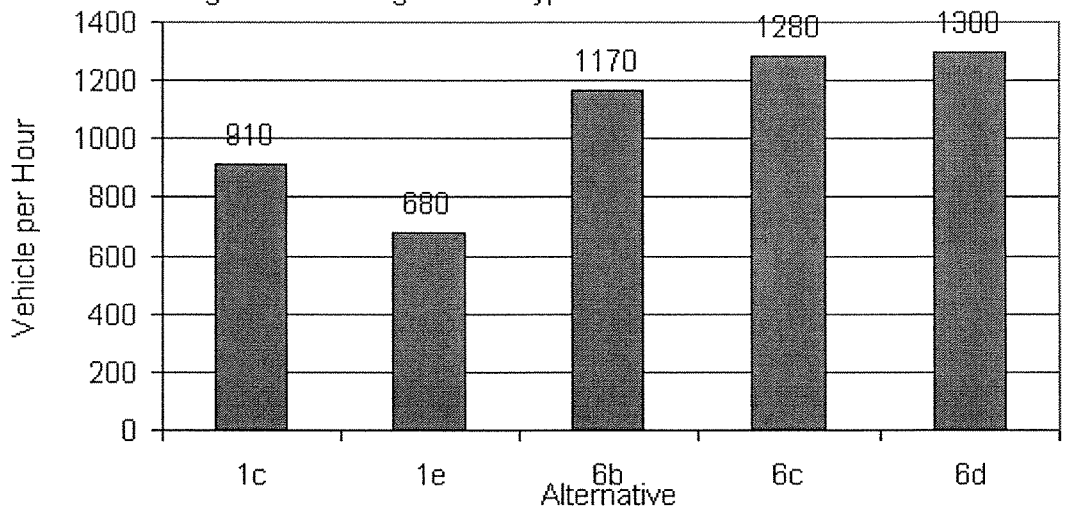
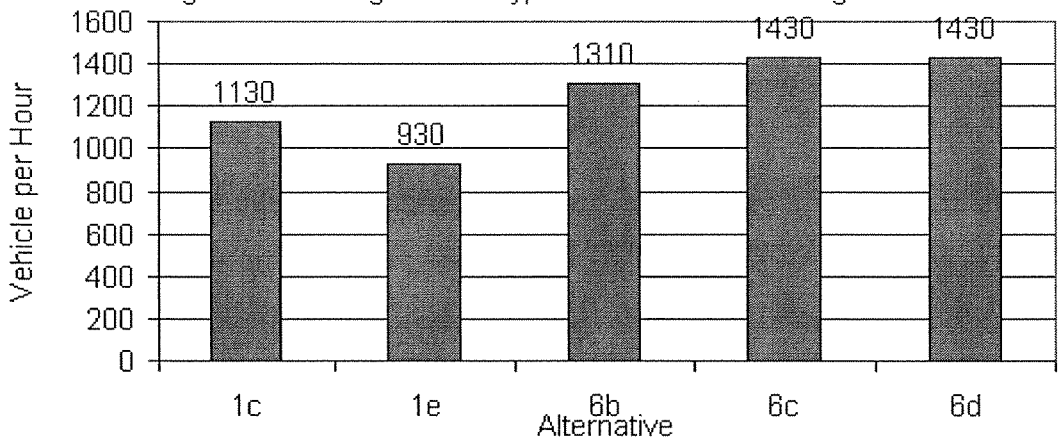


Figure 7-2 - Usage of the Bypass on the Busiest Segment



7.1.2 Diversion of Traffic from Gorham Village

Figure 7-3, below, and Figure 7-4, page 7-3, respectively illustrate the year 2005 and year 2025 PM peak hour traffic volume that would be diverted from Gorham Village for each bypass alternative. Diversion of traffic from Gorham Village is a primary goal and is a key indicator of the effectiveness of each alternative. Year 2005 peak hour diversions would range from 450 vehicles per hour with Alternative 1e to 1,220 vehicles per hour for Alternative 6b. The year 2025 PM peak hour volume removed ranges from 440 vehicles (Alternative 1e) to 1,190 vehicles (Alternative 6b). The percentage of total village traffic diverted from Gorham Village is shown in Figure 7-5, page 7-3 It ranges from 13% (Alternative 1e) to 34% (Alternative 6b).

Neither the No-Build Alternative nor the Upgrade Alternative would divert traffic away from Gorham Village. In fact, the additional road capacity provided under the Upgrade Alternative would actually attract traffic to Gorham Village and result in traffic volumes that are approximately 11% greater than the No Build Alternative.

Figure 7-3 Diversion of Vehicles from Gorham Village
2005 PM Peak Hour

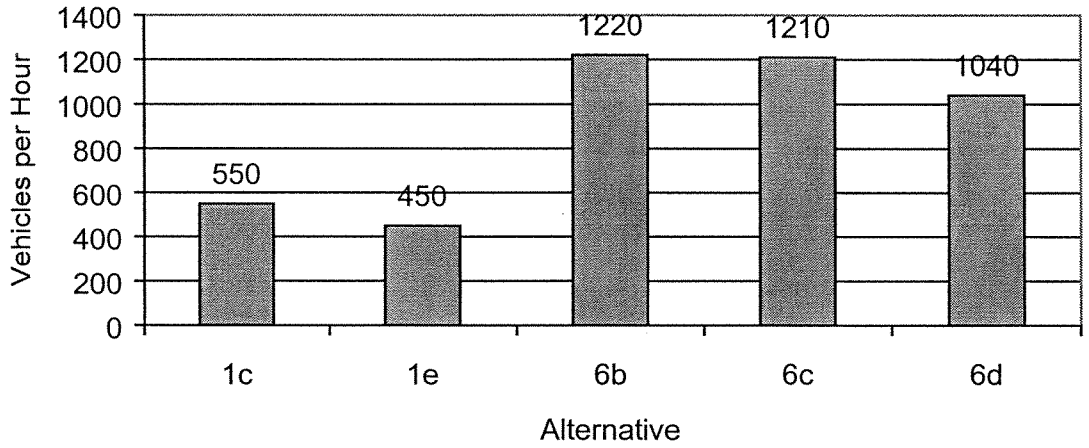


Figure 7-4 Diversion of Vehicles from Gorham Village
2025 PM Peak Hour

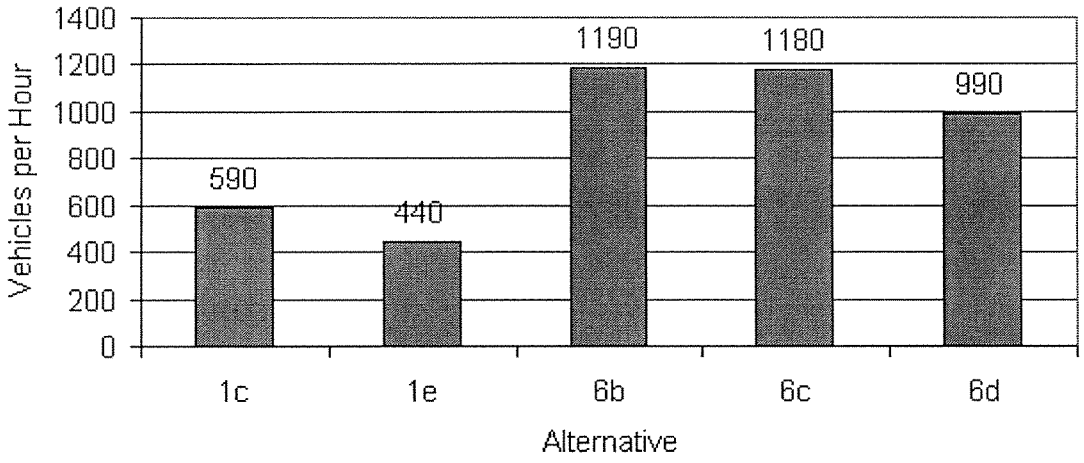
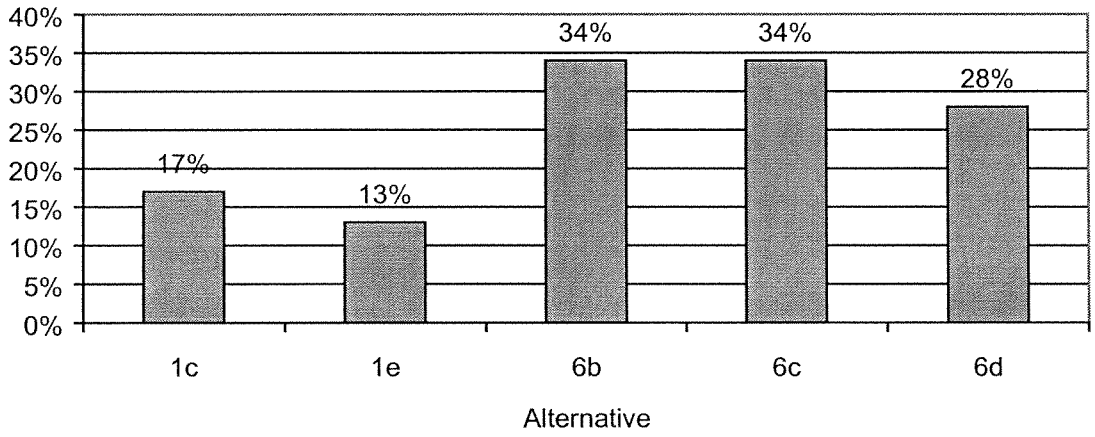


Figure 7-5 Percentage of Gorham Village Traffic Diverted
2025 PM Peak Hour

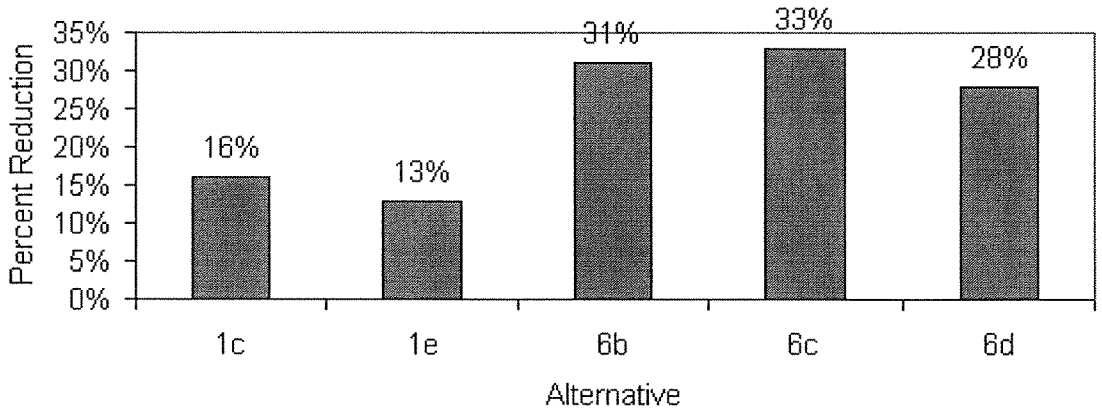


7.1.3 Truck Traffic

Truck traffic has been a noted concern in the Gorham Village area, particularly pertaining to through truck traffic. Narrow travel lanes with limited turning radii often lead to navigational bottlenecks and delays as trucks travel through Gorham Village. Figure 7-6, page 7-4 illustrates the year 2025 proportion of truck traffic that would be diverted from Gorham Village on a daily basis for each bypass alternative. Diversion of truck traffic from Gorham Village is another primary goal and is a key indicator of the effectiveness of each alternative. The daily percentage of truck traffic removed from Gorham Village ranges from 13% (Alternative 1e) to 33% (Alternative 6c).

Neither the No-Build Alternative nor the Upgrade Alternative would result in diversion of truck traffic from Gorham Village. In fact, the additional road capacity provided under the Upgrade Alternative would actually attract truck traffic to Gorham Village and result in truck volumes that are approximately 11% greater than the No Build Alternative.

Figure 7-6 Daily Percentage of Truck Traffic Removed from Village



7.2 Operational Analysis

The following sections describe and summarize the results of the operational analysis of the Study Area intersections under future (2005 and 2025) traffic conditions. The procedures employed in this analysis are those specified in the 2000 Highway Capacity Manual (HCM), Transportation Research Board Special Report 209.

7.2.1 Existing Signalized Intersections

Table 7-1, page 7-5; Table 7-2, page 7-5; Table 7-3, page 7-6; and Table 7-4, page 7-6 summarize the future conditions analysis for the two existing signalized intersections in the Study Area during the 2005 and 2025 AM and PM peak hours. This includes the No-build, Upgrade and five build alternatives. Results of the signalized intersection analysis reflect conditions without actuation of the exclusive pedestrian phases. Refer to Section 2-3, page 2-19 for descriptions of evaluation parameters and measures of effectiveness.

The intersection of Route 25 and Route 114 would operate well over capacity for both the No-Build 2005 and 2025 AM and PM Peak hour time periods. Traffic would be heaviest eastbound in the morning and westbound in the evening. Because these are the primary movements through the intersections, a significant portion of the cycle time would be dedicated to these directions. The result would be poor performance on non-peak approaches, which would have an impact on the overall intersection Level of Service (LOS). This intersection's operation would improve under each of the build alternatives. Intersection operation would remain at or near capacity for Alternatives 1c and 1e (either LOS E or F), but it would improve appreciably under Alternatives 6b, 6c and 6d (LOS C or D) under year 2005 and year 2025 traffic volumes. Alternative 6d would only improve to LOS E under year 2025 PM peak hour traffic volumes, but this LOS could be further improved to LOS D with TSM measures.

Table 7-1 Signalized Intersection Analysis
2005 AM Peak Hour (Existing Intersections)

Intersection	Approach	No-Build[1]		Alignment 1C[3]		Alignment 1E[3]		Alignment 6B[3]		Alignment 6C[3]		Alignment 6D[3]	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Route 25 @ Route 114	Route 25 - EB-LT	17.3	B	118.3	F	122.7	F	48.8	D	36.6	D	44.6	D
	Route 25 - EB-R	27.0	C	21.7	C	19.2	B	22.8	C	15.1	B	16.3	B
	Route 25 - WB-L	488.5	F	209.5	F	285.6	F	48.6	D	15.4	B	25.3	C
	Route 25 - WB-T	19.8	B	19.5	B	15.9	B	17.4	B	10.5	B	10.5	B
	Route 25 - WB-R	16.0	B	16.6	B	13.7	B	15.5	B	9.6	A	9.6	A
	Route 114 - NB-L	31.4	C	29.6	C	25.6	C	29.1	C	21.2	C	21.3	C
	Route 114 - NB-TR	57.7	E	54.3	D	56.4	E	55.0	E	43.0	D	46.8	D
	Route 114 - SB-L	46.0	D	86.4	F	95.0	F	31.7	C	29.0	C	28.1	C
	Route 114 - SB-TR	422.5	F	63.5	E	102.1	F	51.9	D	43.7	D	51.5	D
	OVERALL	**106.9**	**F**	**78.2**	**E**	**87.5**	**F**	**39.0**	**D**	**28.6**	**C**	**32.9**	**C**
Route 25 @ New Portland Rd.	Route 25 - EB-T	14..5	F	13.8	B	14.5	B	10.5	B	11.9	B	12.0	B
	Route 25 - EB-R	30.1	C	24.4	C	20.6	C	15.6	B	17.4	B	19.3	B
	Route 25 - WB-LT	13.5	B	15.0	B	14.7	B	9.6	A	10.7	B	10.7	B
	New Portland - NW-LTR	34.6	C	32.6	C	33.2	C	33.0	C	31.8	C	32.0	C
	Mech. St. - NB-LTR	39.2	D	38.6	D	38.9	D	35.7	D	37.3	D	36.5	D
	OVERALL	**22.1**	**C**	**20.1**	**C**	**19.1**	**B**	**15.9**	**B**	**17.0**	**B**	**17.7**	**B**

[1]Analysis results from Synchro / SimTraffic. Incorporates new phasing and timing & addition of 3rd signal at Elm & Water. Signals are coordinated.

[2]Upgrade alternative separates out all shared movements. For example, the "NB-TR" movement becomes separate thru and right movements.

[3]Analysis results from HCS 2000.

Table 7-2 Signalized Intersection Analysis
2025 AM Peak Hour (Existing Intersections)

Intersection	Approach	No-Build[1]		Alignment 1C[3]		Alignment 1E[3]		Alignment 6B[3]		Alignment 6C[3]		Alignment 6D[3]	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Route 25 @ Route 114	Route 25 - EB-LT	149.9	F	103.7	F	104.6	F	45.8	D	39.4	D	39.0	D
	Route 25 - EB-R	30.6	C	21.7	C	23.2	C	23.8	C	44.1	D	24.8	C
	Route 25 - WB-L	569.1	F	207.7	F	268.1	F	64.9	E	38.2	D	45.3	D
	Route 25 - WB-T	20.7	C	20.5	C	20.3	C	18.4	B	17.8	B	18.1	B
	Route 25 - WB-R	16.1	B	16.9	B	16.9	B	15.7	B	15.6	B	15.7	B
	Route 114 - NB-L	33.1	C	30.4	C	30.9	C	29.7	C	31.3	C	31.7	C
	Route 114 - NB-TR	59.2	E	54.8	D	56.3	E	53.5	D	55.5	E	55.8	E
	Route 114 - SB-L	55.1	E	175.0	F	114.8	F	33.1	C	40.2	D	40.4	D
	Route 114 - SB-TR	232.3	F	96.2	F	154.3	F	58.3	E	73.1	E	83.3	F
	OVERALL	**119.7**	**F**	**89.6**	**F**	**89.0**	**F**	**39.1**	**D**	**37.7**	**D**	**39.0**	**D**
Route 25 @ New Portland Rd.	Route 25 - EB-T	16.5	B	14.0	B	13.7	B	11.5	B	11.6	B	11.6	B
	Route 25 - EB-R	28.3	C	19.1	B	19.8	B	17.4	B	17.5	B	17.2	B
	Route 25 - WB-LT	16.6	B	15.9	B	15.4	B	11.2	B	11.4	B	11.4	B
	New Portland - NW-LTR	31.6	C	37.4	D	38.3	D	34.4	C	34.4	C	34.8	C
	Mech. St. - NB-LTR	32.5	C	30.5	C	30.6	C	33.2	C	32.9	C	32.3	C
	OVERALL	**21.8**	**C**	**18.3**	**B**	**18.4**	**B**	**16.9**	**B**	**16.8**	**B**	**16.7**	**B**

[1]Analysis results from Synchro / SimTraffic. Incorporates new phasing and timing & addition of 3rd signal at Elm & Water. Signals are coordinated.

[2]Upgrade alternative separates out all shared movements. For example, the "NB-TR" movement becomes separate thru and right movements.

[3]Analysis results from HCS 2000. Incorporates new phasing and timing.

Table 7-3 Signalized Intersection Analysis 2005 PM Peak Hour (Existing Intersections)

Intersection	Approach	No-Build[1]		Alignment 1C[3]		Alignment 1E[3]		Alignment 6B[3]		Alignment 6C[3]		Alignment 6D[3]	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Route 25 @ Route 114	Route 25 - EB-LT	69.4	E	63.0	E	59.8	E	41.9	D	40.9	D	40.7	D
	Route 25 - EB-R	37.0	D	33.7	C	33.7	C	33.7	C	33.5	C	33.9	C
	Route 25 - WB-L	22.9	C	21.9	C	21.7	C	19.0	B	18.6	B	18.6	B
	Route 25 - WB-T	131.1	F	89.4	F	93.1	F	40.1	D	36.2	D	40.6	D
	Route 25 - WB-R	19.1	B	19.9	B	19.8	B	17.8	B	18.4	B	18.3	B
	Route 114 - NB-L	127.6	F	31.0	C	32.7	C	32.1	C	31.0	C	34.9	C
	Route 114 - NB-TR	227.4	F	89.6	F	135.9	F	53.7	D	58.7	E	70.6	E
	Route 114 - SB-L	36.8	D	43.8	D	55.1	E	29.0	C	30.1	C	31.0	C
	Route 114 - SB-TR	72.3	E	55.6	E	57.8	E	50.6	D	52.1	D	54.4	D
	OVERALL	**112.0**	**F**	**65.3**	**E**	**73.8**	**E**	**38.9**	**D**	**38.3**	**D**	**42.5**	**D**
Route 25 @ New Portland Rd.	Route 25 - EB-T	22.1	C	23.6	C	23.3	C	18.9	B	19.0	B	19.0	B
	Route 25 - EB-R	20.3	C	19.2	B	19.7	B	18.7	B	18.3	B	18.5	B
	Route 25 - WB-LT	72.0	E	50.6	D	72.8	E	27.4	C	29.0	C	29.5	C
	New Portland - NW-LTR	96.1	F	73.3	E	61.1	E	52.7	D	52.4	D	57.5	E
	Mech. St. - NB-LTR	68.1	E	67.7	E	68.2	E	68.1	E	68.2	E	68.1	E
	OVERALL	**61.1**	**E**	**47.5**	**D**	**53.7**	**D**	**35.6**	**D**	**36.3**	**D**	**37.8**	**D**

[1]Analysis results from Synchro / SimTraffic. Incorporates new phasing and timing & addition of 3rd signal at Elm & Water. Signals are coordinated.

[2]Upgrade alternative separates out all shared movements. For example, the "NB-TR" movement becomes separate thru and right movements.

[3]Analysis results from HCS 2000.

Table 7-4 Signalized Intersection Analysis 2025 PM Peak Hour (Existing Intersections)

Intersection	Approach	No-Build[1]		Alignment 1C[3]		Alignment 1E[3]		Alignment 6B[3]		Alignment 6C[3]		Alignment 6D[3]	
		Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Route 25 @ Route 114	Route 25 - EB-LT	115.6	F	105.6	F	93.1	F	49.0	D	47.0	D	49.0	D
	Route 25 - EB-R	38.5	D	34.1	C	34.7	C	34.4	C	34.3	C	34.7	C
	Route 25 - WB-L	25.0	C	24.4	C	23.9	C	20.2	C	19.6	B	19.9	B
	Route 25 - WB-T	122.2	F	75.4	E	77.0	E	38.3	D	34.7	C	35.4	D
	Route 25 - WB-R	19.3	B	20.6	C	19.9	B	18.1	B	18.8	B	18.5	B
	Route 114 - NB-L	240.1	F	32.4	C	42.5	D	37.6	D	34.4	C	56.0	E
	Route 114 - NB-TR	373.0	F	198.6	F	268.0	F	101.7	F	130.7	F	195.7	F
	Route 114 - SB-L	40.7	D	89.4	F	97.5	F	33.0	C	35.6	D	36.6	D
	Route 114 - SB-TR	102.5	F	61.9	E	75.7	E	52.5	D	57.2	E	60.7	E
	OVERALL	**161.0**	**F**	**89.6**	**F**	**103.2**	**F**	**48.5**	**D**	**53.0**	**D**	**69.7**	**E**
Route 25 @ New Portland Rd.	Route 25 - EB-T	23.1	C	24.4	C	19.7	B	19.7	B	19.9	B	20.0	B
	Route 25 - EB-R	20.8	C	21.2	C	20.0	C	20.0	C	20.0	B	20.3	C
	Route 25 - WB-LT	65.6	E	54.7	D	26.4	C	26.4	C	26.7	C	27.0	C
	New Portland - NW-LTR	93.5	F	64.8	E	59.1	E	59.1	E	59.4	E	58.5	E
	Mech. St. - NB-LTR	68.1	E	68.7	E	68.6	E	68.6	E	69.2	E	69.2	E
	OVERALL	**57.1**	**E**	**46.2**	**D**	**36.3**	**D**	**36.3**	**D**	**36.4**	**D**	**36.1**	**D**

[1]Analysis results from Synchro / SimTraffic. Incorporates new phasing and timing & addition of 3rd signal at Elm & Water. Signals are coordinated.

[2]Upgrade alternative separates out all shared movements. For example, the "NB-TR" movement becomes separate thru and right movements.

[3]Analysis results from HCS 2000. Incorporates new phasing and timing.

The intersection of Route 25 and New Portland Road would operate at an acceptable level (LOS C) for the No-Build AM peak in both 2005 and 2025. The intersection would operate near capacity (LOS E) for the No-Build PM Peak in 2005 and 2025 with heavy delays for westbound Route 25 and northwestbound New Portland Road traffic.This intersection's operation would improve to acceptable levels (LOS D or better) under each of the build alternatives.

7.2.2 Bypass Signalized Intersections

Table 7-5, page 7-8; Table 7-6, page 7-9, Table 7-7, page 7-10; and Table 7-8, page 7-11 summarize the future conditions analysis for the new signalized intersections created by each bypass alternative in the Study Area during the 2005 and 2025 AM and PM peak hours.

Each of the proposed signalized intersections would operate at acceptable levels of service (LOS D or better) for both 2005 and 2025 peak hour periods. Each intersection has been designed to appropriate standards based on forecasted travel volumes. This includes required turning lanes, adequate storage, and proper phasing and timing so as to minimize delays at each location.

7.2.3 Existing Unsignalized Intersections

Table 7-9, page 7-12; Table 7-10, page 7-13, Table 7-11, page 7-14; and Table 7-12, page 7-15 summarize the future conditions analysis for the existing unsignalized intersections in the Study Area during the 2005 and 2025 AM and PM peak hours

.

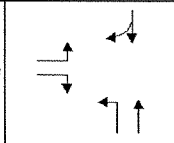
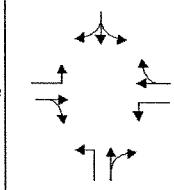
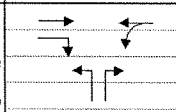
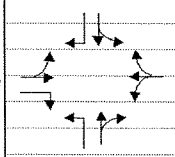
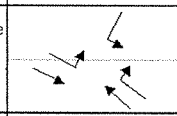
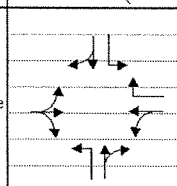
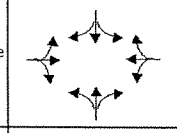
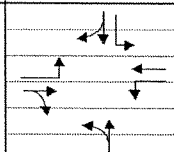
In the AM peak hour (2005 and 2025), the majority of the unsignalized intersections would operate at acceptable levels. Several intersections that would operate at unacceptable levels of service under the No-Build Alternative, would improve to acceptable operation with the build alternatives. These include Route 25 at Flaggy Meadow Road, Route 25 at Libby Ave., and US Route 202 at Route 25 West (Alternatives 6b, 6c and 6d only).

In the PM peak hour (2005 and 2025), the majority of the unsignalized intersections would operate at acceptable levels. Intersections that would operate at unacceptable levels of service under the No-Build Alternative would improve to an acceptable operation including: Route 25 at Flaggy Meadow and Route 25 at Libby Avenue (Alternatives 6b, 6c and 6d only)

7.2.4 Highway Segments

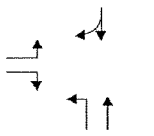
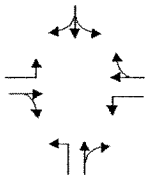
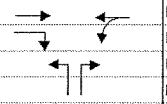
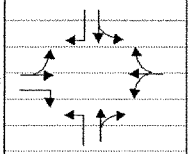
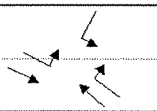
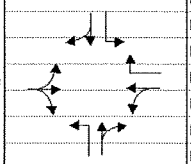
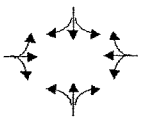
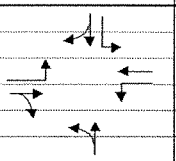
Table 7-13, page 7-16; Table 7-14, page 7-17; Table 7-15, page 7-18; and Table 7-16, page 7-18 summarize the year 2005 and 2025 AM and PM peak hour analysis for the key roadway links in the Study Area. Included are the level of service (LOS) and volume-to-capacity (v/c) ratios for the No-build Alternative and the five build alternatives, Alternatives 1c, 1e, 6b, 6c, and 6d. Refer to Section 2.3.3, page 2-26 for descriptions of evaluation parameters and measures of effectiveness.

Table 7-5 Signalized Intersection Analysis
2005 AM Peak Hour (By-Pass Intersections)

Intersection	Configuration	Movement	Corridors									
			Align. 1C		Align. 1E		Align. 6B		Align 6C		Align 6D	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bypass Rd. @ Route 114 (South)		Route 114 NB - L	15.1	B	12.7	B	13.2	B	10.9	B	12.6	B
		Route 114 NB - T	8.6	A	8.6	A	8.5	A	8.4	A	8.4	A
		Route 114 SB - TR	26.1	C	27.8	C	23.5	C	16.5	B	26.8	C
		Bypass Rd. EB - L	15.1	B	14.3	B	15.2	B	14.8	B	14.0	B
		Bypass Rd. EB - R	15.3	B	14.3	B	15.7	B	15.0	B	13.5	B
		Intersection:	**18.7**	**B**	**19.5**	**B**	**17.6**	**B**	**14.1**	**B**	**19.2**	**B**
Bypass Rd. @ Route 202 / 4 (West)		Bypass Rd. NB - L	9.3	A	9.4	A	9.6	A	9.4	A	9.3	A
		Bypass Rd. NB - TR	10.5	B	9.9	A	10.3	B	10.2	B	9.8	A
		Bypass Rd. SB - LTR	11.4	B	10.6	B	11.7	B	11.4	B	10.6	B
		Route 202 EB - L	6.4	A	6.5	A	6.5	A	6.5	A	6.5	A
		Route 202 EB - TR	9.4	A	9.5	A	10.5	B	9.3	A	8.4	A
		Route 202 WB - L	6.6	A	6.3	A	6.4	A	6.3	A	6.3	A
		Route 202 WB - TR	6.9	A	6.8	A	6.8	A	6.8	A	6.9	A
		Intersection:	**9.5**	**A**	**9.2**	**A**	**10.4**	**B**	**9.5**	**A**	**8.7**	**A**
Bypass Rd. @ Route 25 (West) **(Alignments 1C, 1E)**		Bypass Rd. NB - L	20.1	C	20.3	C	Not Applicable					
		Bypass Rd. NB - R	18.7	B	18.7	B						
		Route 25 EB - T	10.8	B	13.5	B						
		Route 25 EB - R	6.0	A	6.1	A						
		Route 25 WB - LT	4.9	A	4.9	A						
		Intersection:	**9.9**	**A**	**11.5**	**B**						
Bypass Rd. @ Route 25 (West) **(Alignment 6B)**		Bypass Rd. NB - L	Not Applicable				22.4	C	Not Applicable			
		Bypass Rd. NB - TR					26.5	C				
		Bypass Rd. SB - LT					25.8	C				
		Bypass Rd. SB - R					23.3	C				
		Route 25 EB - LT					24.6	C				
		Route 25 EB - R					3.4	A				
		Route 25 WB - LTR					3.6	A				
		Intersection:					**19.5**	**B**				
Bypass Rd. @ Route 25 (West) **(Alignment 6C & 6D Unsignalized)**		Rte. 25 SB - L	Not Applicable						55.7	F	70.4	F
		Bypass Rd. EB - L							9.1	A	9.5	A
Bypass Rd. @ Route 114 (North)		Route 114 NB - L	Not Applicable				7.9	A	7.9	A	7.9	A
		Route 114 NB - TR					7.7	A	7.8	A	7.7	A
		Route 114 SB - L					15.5	B	9.4	A	9.5	A
		Route 114 SB - TR					8.5	A	8.3	A	8.4	A
		Bypass Rd. EB - LTR					9.4	A	18.2	B	20.2	C
		Bypass Rd. WB - LT					7.9	A	9.0	A	9.1	A
		Bypass Rd. WB - R					8.0	A	7.6	A	7.7	A
		Intersection:					**10.6**	**B**	**12.5**	**B**	**13.4**	**B**
Bypass Rd. @ Route 202 / 4 (East)		Route 202 NB - LTR	Not Applicable				13.0	B	12.9	B	20.5	C
		Route 202 SB - LTR					20.0	B	19.8	B	13.0	B
		Bypass EB - LTR					20.3	C	24.2	C	27.8	C
		Bypass WB - LTR					8.3	A	8.6	A	8.7	A
		Intersection:					**18.0**	**B**	**19.3**	**B**	**21.0**	**C**
Bypass Rd. / Rte. 237 @ Route 25[1]		Rte. 25 NB - LT	See Unsignalized Analysis				12.7	B	12.8	B	12.9	B
		Rte. 237 SB - L					19.3	B	19.8	B	19.7	B
		Rte. 237 SB - TR					11.4	B	11.4	B	11.4	B
		Bypass EB - L					9.8	A	9.8	A	9.8	A
		Bypass EB - TR					19.4	B	16.9	B	17.2	B
		Bypass WB - L					13.0	B	12.3	B	12.4	B
		Bypass WB - T					11.2	B	11.7	B	11.7	B
		Intersection:					**17.2**	**B**	**15.8**	**B**	**15.9**	**B**

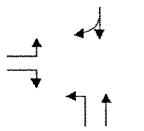
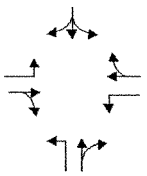
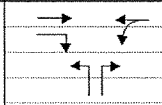
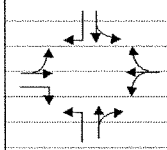
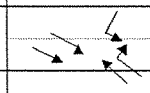
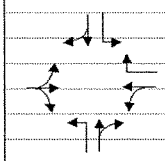
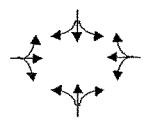
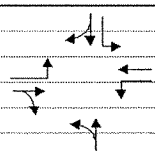
[1]NB-R and WB-R are free right turns into dedicated lanes; they are not signal-controlled movements.

Table 7-6 Signalized Intersection Analysis
2025 AM Peak Hour (By-Pass Intersections)

Intersection	Configuration	Movement	Corridors									
			Align. 1C		Align. 1E		Align. 6B		Align 6C		Align 6D	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bypass Rd. @ Route 114 (South)		Route 114 NB - L	42.0	D	26.4	C	26.4	C	61.3	E	25.3	C
		Route 114 NB - T	8.8	A	8.6	A	8.6	A	8.5	A	8.5	A
		Route 114 SB - TR	29.6	C	85.3	F	85.3	F	64.5	E	104.5	F
		Bypass Rd. EB - L	15.0	B	14.1	B	14.1	B	14.5	B	14.0	B
		Bypass Rd. EB - R	30.1	C	27.9	C	27.9	C	34.7	C	24.9	C
		Intersection:	**26.9**	**C**	**51.0**	**D**	**51.0**	**D**	**46.0**	**D**	**61.2**	**E**
Bypass Rd. @ Route 202 / 4 (West)		Bypass Rd. NB - L	9.9	A	9.6	A	9.8	A	10.0	A	9.6	A
		Bypass Rd. NB - TR	10.7	B	10.1	B	10.5	B	10.5	B	10.0	B
		Bypass Rd. SB - LTR	15.4	B	12.3	B	11.8	B	13.6	B	12.1	B
		Route 202 EB - L	6.2	A	6.3	A	6.4	A	6.3	A	6.4	A
		Route 202 EB - TR	11.0	B	12.6	B	21.0	C	11.5	B	13.1	B
		Route 202 WB - L	7.5	A	6.8	A	7.3	A	6.6	A	6.7	A
		Route 202 WB - TR	7.1	A	7.0	A	7.0	A	7.0	A	7.0	A
		Intersection:	**11.5**	**B**	**11.2**	**B**	**15.0**	**B**	**11.1**	**B**	**11.3**	**B**
Bypass Rd. @ Route 25 (West) **(Alignments 1C, 1E)**		Bypass Rd. NB - L	20.7	C	21.2	C	**Not Applicable**					
		Bypass Rd. NB - R	18.8	B	18.7	B						
		Route 25 EB - T	12.7	B	18.3	B						
		Route 25 EB - R	6.8	A	5.6	A						
		Route 25 WB - LT	5.0	A	5.1	A						
		Intersection:	**11.1**	**B**	**14.9**	**B**						
Bypass Rd. @ Route 25 (West) **(Alignment 6B)**		Bypass Rd. NB - L	**Not Applicable**				22.4	C	**Not Applicable**			
		Bypass Rd. NB - TR					25.7	C				
		Bypass Rd. SB - LT					25.2	C				
		Bypass Rd. SB - R					23.3	C				
		Route 25 EB - LT					38.2	D				
		Route 25 EB - R					3.5	A				
		Route 25 WB - LTR					4.3	A				
		Intersection:					**27.6**	**C**				
Bypass Rd. @ Route 25 (West) **(Alignment 6C - Unsignalized)**		Rte. 25 SB - L	**Not Applicable**						101.9	F	124.3	F
		Bypass Rd. EB - L							9.9	A	10.2	B
Bypass Rd. @ Route 114 (North)		Route 114 NB - L	**Not Applicable**				7.9	A	11.1	B	11.1	B
		Route 114 NB - TR					7.9	A	11.0	B	11.0	B
		Route 114 SB - L					23.7	C	14.4	B	14.5	B
		Route 114 SB - TR					10.2	B	9.9	A	9.8	A
		Bypass Rd. EB - LTR					9.2	A	32.1	C	27.6	C
		Bypass Rd. WB - LT					7.7	A	15.2	B	15.2	B
		Bypass Rd. WB - R					8.1	A	14.6	B	14.6	B
		Intersection:					**13.2**	**B**	**18.1**	**B**	**16.6**	**B**
Bypass Rd. @ Route 202 / 4 (East)		Route 202 NB - LTR	**Not Applicable**				13.1	B	13.5	B	13.4	B
		Route 202 SB - LTR					26.9	C	29.7	C	27.1	C
		Bypass EB - LTR					23.4	C	77.2	E	77.5	E
		Bypass WB - LTR					8.1	A	8.7	A	8.8	A
		Intersection:					**22.1**	**C**	**46.2**	**D**	**45.5**	**D**
Bypass Rd. / Rte. 237 @ Route 25[1]		Rte. 25 NB - LT	**See Unsignalized Analysis**				9.9	A	12.6	B	12.3	B
		Rte. 237 SB - L					17.1	B	58.9	E	44.0	D
		Rte. 237 SB - TR					13.6	B	11.4	B	11.4	B
		Bypass EB - L					10.9	B	9.9	A	9.9	A
		Bypass EB - TR					12.6	B	17.0	B	21.8	C
		Bypass WB - L					47.8	D	13.6	B	19.6	B
		Bypass WB - T					11.4	B	10.9	B	11.8	B
		Intersection:					**26.1**	**C**	**29.3**	**C**	**25.9**	**C**

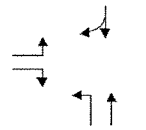
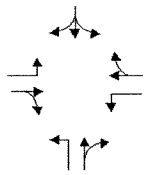
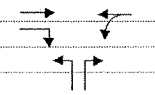
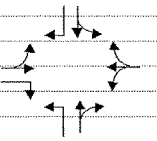
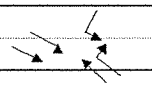
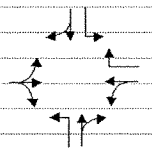
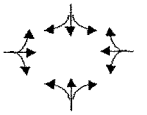
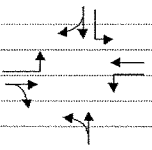
[1]NB-R and WB-R are free right turns into dedicated lanes; they are not signal-controlled movements.

Table 7-7 Signalized Intersection Analysis
2005 PM Peak Hour (By-Pass Intersections)

Intersection	Configuration	Movement	Corridors									
			Align. 1C		Align. 1E		Align. 6B		Align 6C		Align 6D	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bypass Rd. @ Route 114 (South)		Route 114 NB - L	15.6	B	9.9	A	16.4	B	11.7	B	7.4	A
		Route 114 NB - T	6.4	A	6.8	A	6.3	A	5.8	A	6.9	A
		Route 114 SB - TR	18.4	B	16.2	B	18.3	B	16.6	B	14.7	B
		Bypass Rd. EB - L	36.5	D	35.3	D	36.5	D	35.8	D	34.8	C
		Bypass Rd. EB - R	23.1	C	22.5	C	23.0	C	23.1	C	22.5	C
		Intersection:	**15.3**	**B**	**12.1**	**B**	**15.5**	**B**	**13.7**	**B**	**10.5**	**B**
Bypass Rd. @ Route 202 / 4 (West)		Bypass Rd. NB - L	8.9	A	9.0	A	10.6	B	8.7	A	8.2	A
		Bypass Rd. NB - TR	9.3	A	8.1	A	8.7	A	8.9	A	7.9	A
		Bypass Rd. SB - LTR	7.9	A	7.7	A	7.9	A	7.8	A	7.6	A
		Route 202 EB - L	10.3	B	10.4	B	10.4	B	10.6	B	10.4	B
		Route 202 EB - TR	12.7	B	12.5	B	12.6	B	15.6	B	12.6	B
		Route 202 WB - L	11.5	B	10.7	B	11.0	B	11.7	B	10.7	B
		Route 202 WB - TR	11.8	B	11.8	B	12.1	B	11.9	B	11.8	B
		Intersection:	**10.2**	**B**	**9.9**	**A**	**10.4**	**B**	**11.1**	**B**	**10.0**	**A**
Bypass Rd. @ Route 25 (West) **(Alignments 1C, 1E)**		Bypass Rd. NB - L	25.2	C	20.7	C	Not Applicable					
		Bypass Rd. NB - R	17.4	B	17.3	B						
		Route 25 EB - T	7.0	A	7.3	A						
		Route 25 EB - R	7.0	A	6.8	A						
		Route 25 WB - LT	13.1	B	15.5	B						
		Intersection:	**14.2**	**B**	**13.9**	**B**						
Bypass Rd. @ Route 25 (West) **(Alignment 6B)**		Bypass Rd. NB - L	Not Applicable				28.9	C	Not Applicable			
		Bypass Rd. NB - TR					15.3	B				
		Bypass Rd. SB - LT					15.2	B				
		Bypass Rd. SB - R					17.9	B				
		Route 25 EB - LT					19.0	B				
		Route 25 EB - R					5.9	A				
		Route 25 WB - LTR					10.1	B				
		Intersection:					**15.7**	**B**				
Bypass Rd. @ Route 25 (West) **(Alignment 6C & 6D - Unsignalized)**		Rte. 25 SB - L	Not Applicable						15.9	B	14.7	B
		Bypass Rd. EB - L							8.3	A	8.0	A
Bypass Rd. @ Route 114 (North)		Route 114 NB - L	Not Applicable				9.1	A	11.5	B	11.7	B
		Route 114 NB - TR					10.0	B	11.8	B	11.9	B
		Route 114 SB - L					13.1	B	12.2	B	12.6	B
		Route 114 SB - TR					9.3	A	11.1	B	11.1	B
		Bypass Rd. EB - LTR					9.9	A	9.1	A	9.1	A
		Bypass Rd. WB - LT					10.8	B	11.8	B	12.1	B
		Bypass Rd. WB - R					12.1	B	9.4	A	9.4	A
		Intersection:					**11.1**	**B**	**10.9**	**B**	**11.1**	**B**
Bypass Rd. @ Route 202 / 4 (East)		Route 202 NB - LTR	Not Applicable				15.0	B	15.2	B	15.2	B
		Route 202 SB - LTR					13.8	B	16.1	B	16.6	B
		Bypass EB - LTR					13.8	B	14.8	B	15.4	B
		Bypass WB - LTR					13.5	B	14.3	B	14.4	B
		Intersection:					**14.0**	**B**	**15.0**	**B**	**15.3**	**B**
Bypass Rd. / Rte. 237 @ Route 25[1]		Rte. 25 NB - LT	See Unsignalized Analysis				10.6	B	10.6	B	10.6	B
		Rte. 237 SB - L					12.9	B	12.8	B	12.8	B
		Rte. 237 SB - TR					10.7	B	10.7	B	10.7	B
		Bypass EB - L					4.7	A	4.7	A	4.7	A
		Bypass EB - TR					6.6	A	6.9	A	6.9	A
		Bypass WB - L					7.1	A	8.0	A	8.1	A
		Bypass WB - T					8.7	A	9.4	A	9.4	A
		Intersection:					**8.2**	**A**	**8.6**	**A**	**8.7**	**A**

[1]NB-R and WB-R are free right turns into dedicated lanes; they are not signal-controlled movements.

Table 7-8 Signalized Intersection Analysis
2025 PM Peak Hour (By-Pass Intersections)

Intersection	Configuration	Movement	Corridors									
			Align. 1C		Align. 1E		Align. 6B		Align 6C		Align 6D	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Bypass Rd. @ Route 114 (South)		Route 114 NB - L	35.4	D	22.7	C	41.0	D	19.6	B	14.3	B
		Route 114 NB - T	5.6	A	7.8	A	22.5	C	6.8	A	8.1	A
		Route 114 SB - TR	31.4	C	20.8	C	21.2	C	23.6	C	22.3	C
		Bypass Rd. EB - L	46.7	D	39.9	D	34.9	C	43.3	D	42.2	D
		Bypass Rd. EB - R	20.4	C	21.7	C	7.1	A	21.6	C	20.5	C
		Intersection:	**24.6**	**C**	**16.7**	**B**	**21.4**	**C**	**16.8**	**B**	**13.9**	**B**
Bypass Rd. @ Route 202 / 4 (West)		Bypass Rd. NB - L	9.3	A	9.4	A	14.6	B	9.4	A	9.2	A
		Bypass Rd. NB - TR	13.0	B	9.3	A	9.3	A	9.9	A	9.0	A
		Bypass Rd. SB - LTR	8.3	A	7.9	A	8.3	A	8.2	A	7.9	A
		Route 202 EB - L	10.3	B	10.4	B	10.4	B	10.3	B	10.4	B
		Route 202 EB - TR	14.5	B	13.6	B	14.1	B	14.1	B	13.8	B
		Route 202 WB - L	10.7	B	10.4	B	10.4	B	10.4	B	10.4	B
		Route 202 WB - TR	12.4	B	12.6	B	12.8	B	12.8	B	12.8	B
		Intersection:	**11.9**	**B**	**10.6**	**B**	**11.8**	**B**	**11.0**	**B**	**10.7**	**B**
Bypass Rd. @ Route 25 (West) **(Alignments 1C, 1E)**		Bypass Rd. NB - L	42.1	D	25.3	C	**Not Applicable**					
		Bypass Rd. NB - R	17.5	B	17.4	B						
		Route 25 EB - T	7.3	A	7.7	A						
		Route 25 EB - R	7.3	A	7.1	A						
		Route 25 WB - LT	15.3	B	20.1	C						
		Intersection:	**19.7**	**B**	**17.2**	**B**						
Bypass Rd. @ Route 25 (West) **(Alignment 6B)**		Bypass Rd. NB - L	**Not Applicable**				37.5	D	**Not Applicable**			
		Bypass Rd. NB - TR					15.4	B				
		Bypass Rd. SB - LT					15.4	B				
		Bypass Rd. SB - R					17.1	B				
		Route 25 EB - LT					21.4	C				
		Route 25 EB - R					6.2	A				
		Route 25 WB - LTR					13.8	B				
		Intersection:					**18.3**	**B**				
Bypass Rd. @ Route 25 (West) **(Alignment 6C & 6D - Unsignalized)**		Rte. 25 SB - L	**Not Applicable**						18.2	B	17.5	B
		Bypass Rd. EB - L							8.5	A	8.4	A
Bypass Rd. @ Route 114 (North)		Route 114 NB - L	**Not Applicable**				9.1	A	20.2	C	20.2	C
		Route 114 NB - TR					11.8	B	52.2	D	50.6	D
		Route 114 SB - L					74.0	E	24.4	C	24.5	C
		Route 114 SB - TR					9.9	A	11.8	B	11.8	B
		Bypass Rd. EB - LTR					10.5	B	21.9	C	21.7	C
		Bypass Rd. WB - LT					10.8	B	32.8	C	34.4	C
		Bypass Rd. WB - R					13.5	B	14.5	B	14.5	B
		Intersection:					**21.1**	**C**	**29.9**	**C**	**30.0**	**C**
Bypass Rd. @ Route 202 / 4 (East)		Route 202 NB - LTR	**Not Applicable**				17.0	B	21.5	C	20.6	C
		Route 202 SB - LTR					15.8	B	20.8	C	20.2	C
		Bypass EB - LTR					18.3	B	20.8	C	18.6	B
		Bypass WB - LTR					12.5	B	13.4	B	13.9	B
		Intersection:					**15.8**	**B**	**18.9**	**B**	**18.1**	**B**
Bypass Rd. / Rte. 237 @ Route 25[1]		Rte. 25 NB - LT	**See Unsignalized Analysis**				10.7	B	10.7	B	10.7	B
		Rte. 237 SB - L					13.2	B	13.1	B	13.1	B
		Rte. 237 SB - TR					10.8	B	10.8	B	10.8	B
		Bypass EB - L					4.8	A	4.9	A	5.1	A
		Bypass EB - TR					6.7	A	6.9	A	6.9	A
		Bypass WB - L					6.8	A	7.1	A	6.5	A
		Bypass WB - T					7.8	A	8.3	A	11.1	B
		Intersection:					**7.9**	**A**	**8.2**	**A**	**9.5**	**A**

[1]NB-R and WB-R are free right turns into dedicated lanes; they are not signal-controlled movements.

Table 7-9 Unsignalized Intersection Analysis
2005 AM Peak Hour (Existing Intersections)

Existing Intersection	Movement	2005 Analysis											
		No-Build		Alt. 1C		Alt. 1E		Alt. 6B		Alt. 6C		Alt. 6D	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
New Portland @ Brackett	Brackett NB LTR[1]	35.3	E	24.9	C	27.1	D	32.0	D	25.4	D	89.5	F
	Libby SB LTR[1]	73.7	F	29.9	D	46.2	E	86.5	F	86.2	F	128.1	F
	New Portland EB-L	7.4	A	7.4	A	7.4	A	7.4	A	7.3	A	7.4	A
	New Portland WB-L	9.4	A	9.4	A	9.2	A	9.1	A	9.1	A	9.2	A
Route 114 @ Day Rd.	Day Rd. WB-LR	13.2	B	18.5	C	16.8	C	17.0	C	15.0	B	15.9	C
	Route 114 SB-L	8.0	A	7.7	A	7.7	A	7.7	A	7.7	A	7.7	A
Route 25 @ Flaggy Meadow	Flaggy Meadow NB-LTR	226.7	F	20.1	C	24.5	C	15.1	C	17.5	C	21.9	C
	College Ave SB-LTR	14.0	B	15.3	C	11.6	B	12.7	B	13.7	B	17.6	C
	Route 25 EB-L	7.9	A	7.6	A	7.6	A	7.5	A	7.4	A	7.4	A
	Route 25 WB-L	10.4	B	9.8	A	9.8	A	9.1	A	8.6	A	8.9	A
Route 25 @ Cressey	Route 25 WB-L	11.3	B	9.8	A	10.2	B	9.4	A	8.8	A	8.8	A
	Cressey Rd. NB-LR[1]	28.9	D	16.2	C	17.6	C	16.4	C	11.6	B	12.9	B
Cressey @ Flaggy Meadow	Flaggy Meadow EB-L	7.3	A	7.3	A	7.3	A	7.3	A	7.3	A	7.3	A
	Flaggy Meadow WB-L	7.7	A	7.8	A	7.6	A	7.5	A	7.7	A	7.8	A
	Cressey Rd. NB-LTR	12.0	B	11.8	B	11.0	B	11.4	B	11.9	B	12.2	B
	Cressey Rd. SB-LTR	14.9	B	13.4	B	12.3	B	12.2	B	13.1	B	13.5	B
Route 202/4 @ Route 25 - East	Route 25 EB-L	8.4	A	8.7	A	8.6	A	7.8	A	7.8	A	7.8	A
	Route 202/4 SB-LR[1]	17.3	C	18.2	C	18.4	C	12.2	B	12.3	B	12.5	B
Route 202/4 @ Route 25 - West	Route 25 EB-L	7.6	A	7.5	A	7.5	A	7.4	A	7.4	A	7.3	A
	Route 25 WB-L	15.1	C	11.7	B	12.4	B	10.6	B	10.0	B	11.4	B
	Route 202/4 NB-L	113.4	F	51.7	F	60.4	F	36.6	E	31.9	D	42.1	E
	Route 202/4 NB-TR	283.4	F	44.6	E	55.5	F	28.4	D	23.2	C	37.3	E
	Maple St. SB-LTR	66.0	F	45	E	51.8	F	33.6	D	30.0	D	39.3	E
Route 202/4 @ Cressey Rd.	Route 202/4 EB-L	7.7	A	7.7	A	7.7	A	7.7	A	7.7	A	7.7	A
	Cressey Rd. SB-LR[1]	23.5	C	18.0	C	16.3	C	18.4	C	18.1	C	17.4	C
Route 25 @ Libby - West	Route 25 EB-L	7.7	A	7.9	A	7.9	A	7.4	A	7.4	A	7.4	A
	Route 25 WB-L	8.4	A	8.3	A	8.4	A	7.9	A	8.0	A	8.0	A
	Libby NB-LTR	32.3	D	8.4	A	8.7	A	7.4	A	7.3	A	7.3	A
	Libby SB-LTR	52.6	F	11.4	B	14.9	B	10.3	B	8.6	A	8.7	A
Route 25 @ Rte. 237 (Mosher's Corner)	Route 25 EB-L	7.9	A	8.1	A	8.1	A	See Signalized Analysis		See Signalized Analysis		See Signalized Analysis	
	Rte. 237 SB-L	149.3	F	191.7	F	25.2	D						
	Rte. 237 SB-R	9.4	A	9.8	A	9.8	A						

[1]This was treated as a two-lane approach in HCS 3.1c (as opposed to a flared approach), even though it is not striped as such. The value listed in the "delay" column represents the

[Brackett @ New Portland Rd. - NB-T volume was decreased from 306 vph to 290 vph (6D) in order to obtain results from HCS. Actual delay will be somewhat greater than reported

Table 7-10 Unsignalized Intersection Analysis
2025 AM Peak Hour (Existing Intersections)

Existing Intersection	Movement	2025 Analysis											
		No-Build		Alt. 1C		Alt. 1E		Alt. 6B		Alt. 6C		Alt. 6D	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
New Portland @ Brackett	Brackett NB LTR[1]	**24.9**	**C**	101.3	F	25.9	D	24.4	C	22.7	C	22.7	C
	Libby SB LTR[1]	**312.3**	**F**	130.3	F	169.4	F	283.2	F	281.1	F	316.0	F
	New Portland EB-L	**7.4**	**A**	7.4	A	7.4	A	7.4	A	7.4	A	7.4	A
	New Portland WB-L	**312.3**	**F**	9.4	A	9.4	A	9.3	A	9.3	A	9.3	A
Route 114 @ Day Rd.	Day Rd. WB-LR	**8.0**	**A**	8.4	A	8.1	A	8.1	A	8.0	A	8.0	A
	Route 114 SB-L	**12.0**	**B**	18.0	C	10.9	B	14.7	B	14.2	B	9.6	A
Route 25 @ Flaggy Meadow	Flaggy Meadow NB-LTR	**7.9**	**A**	7.6	A	7.7	A	7.5	A	7.4	A	12.8	B
	College Ave SB-LTR	**11.0**	**B**	10.1	B	10.0	B	9.6	A	8.9	A	14.1	B
	Route 25 EB-L	**332.0**	**F**	22.4	C	23.7	C	16.9	C	18.3	C	7.3	A
	Route 25 WB-L	**16.2**	**C**	16.6	C	12.1	B	15.5	C	16.9	C	7.8	A
Route 25 @ Cressey	Route 25 WB-L	**12.1**	**B**	10.0	B	10.5	B	10.0	A	9.1	A	9.3	A
	Cressey Rd. NB-LR[1]	**37.9**	**E**	18.0	C	20.1	C	17.7	C	13.1	B	14.2	B
Cressey @ Flaggy Meadow	Flaggy Meadow EB-L	**7.3**	**A**	7.3	A	7.3	A	7.3	A	7.3	A	7.4	A
	Flaggy Meadow WB-L	**7.8**	**A**	8.0	A	7.7	A	7.6	A	7.8	A	8.6	A
	Cressey Rd. NB-LTR	**12.7**	**B**	13.0	B	11.5	B	12.4	B	12.2	B	19.1	C
	Cressey Rd. SB-LTR	**17.2**	**C**	15.5	C	13.0	B	13.3	B	13.6	B	13.2	B
Route 202/4 @ Route 25 - East	Route 25 EB-L	**8.6**	**A**	8.7	A	8.6	A	7.8	A	7.9	A	7.9	A
	Route 202/4 SB-LR[1]	**19.3**	**C**	18.7	C	18.3	C	12.3	B	12.3	B	12.3	B
Route 202/4 @ Route 25 - West	Route 25 EB-L	**7.7**	**A**	7.6	A	7.6	A	7.4	A	7.4	A	7.4	A
	Route 25 WB-L	**17.2**	**C**	12.5	B	13.4	B	11.8	B	10.8	B	11.5	B
	Route 202/4 NB-L	**188.3**	**F**	72.8	F	84.8	F	51.7	F	41.0	E	50.6	F
	Route 202/4 NB-TR	**421.4**	**F**	59.0	F	82.9	F	39.7	E	29.9	D	42.8	E
	Maple St. SB-LTR	**74.2**	**F**	60.4	F	68.2	F	46.9	E	37.7	E	45.9	E
Route 202/4 @ Cressey Rd.	Route 202/4 EB-L	**7.8**	**A**	7.5	A	7.8	A	7.8	A	7.8	A	7.8	A
	Cressey Rd. SB-LR[1]	**32.2**	**D**	18.6	C	18.6	C	20.6	C	19.9	C	20.2	C
Route 25 @ Libby - West	Route 25 EB-L	**7.7**	**A**	7.9	A	7.9	A	7.7	A	7.4	A	7.4	A
	Route 25 WB-L	**8.4**	**A**	8.3	A	8.3	A	7.4	A	7.9	A	7.8	A
	Libby NB-LTR	**32.3**	**D**	12.0	B	12.3	B	7.1	A	7.4	A	7.3	A
	Libby SB-LTR	**50.9**	**F**	24.8	C	43.1	E	10.0	B	12.2	B	10.4	B
Route 25 @ Rte. 237 (Mosher's Corner)	Route 25 EB-L	**8.0**	**A**	8.2	A	8.2	A	**See Signalized Analysis**		**See Signalized Analysis**		**See Signalized Analysis**	
	Rte. 237 SB-L	**249.9**	**F**	277.5	F	264.6	F						
	Rte. 237 SB-R	**9.5**	**A**	9.8	A	9.8	A						

[1]This was treated as a two-lane approach in HCS 3.1c (as opposed to a flared approach), even though it is not striped as such. The value listed in the "delay" column represents the

Table 7-11 Unsignalized Intersection Analysis
2005 PM Peak Hour (Existing Intersections)

Existing Intersection	Movement	2005 Analysis											
		No-Build		Alt. 1C		Alt. 1E		Alt. 6B		Alt. 6C		Alt. 6D	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
New Portland @ Brackett	Brackett NB LTR[1]	54.2	F	29.9	D	43.4	E	64.7	F	63.4	F	89.9	F
	Libby SB LTR[1]	32.4	D	26.1	D	28.8	D	27.7	D	26.4	D	89.7	F
	New Portland EB-L	8.5	A	8.3	A	8.3	A	8.4	A	8.6	A	8.6	A
	New Portland WB-L	8.0	A	7.9	A	8.0	A	7.8	A	7.7	A	7.8	A
Route 114 @ Day Rd.	Day Rd. WB-LR	23.9	C	50.9	F	25.2	D	30.0	D	25.2	D	14.1	B
	Route 114 SB-L	9.7	A	8.9	A	8.9	A	8.8	A	8.4	A	8.9	A
Route 25 @ Flaggy Meadow	Flaggy Meadow NB-LTR	28.7	D	13.9	B	16.0	C	12.2	B	12.4	B	14.0	B
	College Ave SB-LTR	193.0	F	23.5	C	29.9	D	18.5	C	17.1	C	20.3	C
	Route 25 EB-L	10.0	A	9.2	A	9.4	A	8.8	A	8.3	A	8.6	A
	Route 25 WB-L	8.6	A	7.8	A	8.0	A	7.6	A	7.6	A	7.5	A
Route 25 @ Cressey	Route 25 WB-L	8.3	A	7.8	A	7.9	A	7.7	A	7.5	A	7.3	A
	Cressey Rd. NB-LR[1]	101.3	F	20.8	C	23.8	C	18.2	C	13.0	B	14.4	B
Cressey @ Flaggy Meadow	Flaggy Meadow EB-L	7.6	A	7.3	A	7.4	A	7.3	A	7.5	A	7.5	A
	Flaggy Meadow WB-L	7.4	A	7.5	A	7.4	A	7.5	A	7.5	A	7.5	A
	Cressey Rd. NB-LTR	12.6	B	11.8	B	10.8	B	11.2	B	11.8	B	11.9	B
	Cressey Rd. SB-LTR	11.1	B	9.5	A	9.7	A	9.3	A	10.1	B	10.2	B
Route 202/4 @ Route 25 - East	Route 25 EB-L	10.5	B	10.4	B	10.6	B	9.1	A	9.2	A	9.3	A
	Route 202/4 SB-LR[1]	24.4	C	24.0	C	25.8	D	14.5	B	15.3	C	15.5	C
Route 202/4 @ Route 25 - West	Route 25 EB-L	10.5	B	9.3	A	9.7	A	8.9	A	8.6	A	9.2	A
	Route 25 WB-L	9.7	A	8.6	A	8.6	A	8.3	A	8.1	A	7.9	A
	Route 202/4 NB-L	242.9	F	63.8	F	72.7	F	43.7	E	36.0	E	41.7	E
	Route 202/4 NB-TR	202.0	F	31.6	D	33.2	D	21.0	C	17.8	C	17.2	C
	Maple St. SB-LTR	202.0	F	117.3	F	141.4	F	66.6	F	54.1	F	71.1	F
Route 202/4 @ Cressey Rd.	Route 202/4 EB-L	8.4	A	8.3	A	8.0	A	8.1	A	8.1	A	8.0	A
	Cressey Rd. SB-LR[1]	12.6	B	11.8	B	11.8	B	11.8	B	12.3	B	12.2	B
Route 25 @ Libby - West	Route 25 EB-L	8.6	A	8.7	A	8.7	A	7.7	A	7.7	A	7.8	A
	Route 25 WB-L	7.7	A	8.0	A	7.9	A	7.4	A	7.4	A	7.4	A
	Libby NB-LTR	267.8	F	16.6	C	37.7	E	9.0	A	9.2	A	9.5	A
	Libby SB-LTR	267.8	F	13.5	B	14.3	B	7.2	A	7.3	A	7.4	A
Route 25 @ Rte. 237 (Mosher's Corner)	Route 25 EB-L	11.5	B	11.5	B	11.5	B	See Signalized Analysis		See Signalized Analysis		See Signalized Analysis	
	Rte. 237 SB-L	26.2	D	35.0	D	35.0	D						
	Rte. 237 SB-R	12.0	B	12.1	B	12.2	B						

[1]This was treated as a two-lane approach in HCS 3.1c (as opposed to a flared approach), even though it is not striped as such. The value listed in the "delay" column represents the [Brackett @ New Portland Rd. - NB-T volume was decreased from 275 vph to 260 vph (6D) in order to obtain results from HCS. Actual delay will be somewhat greater than reported

Table 7-12 Unsignalized Intersection Analysis
2025 PM Peak Hour (Existing Intersections)

Existing Intersection	Movement	2025 Analysis											
		No-Build		Alt. 1C		Alt. 1E		Alt. 6B		Alt. 6C		Alt. 6D	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
New Portland @ Brackett	Brackett NB LTR[1]	**231.0**	**F**	142.6	F	169.1	F	279.2	F	305.3	F	319.1	F
	Libby SB LTR[1]	**231.0**	**F**	142.6	F	169.1	F	279.2	F	305.3	F	319.1	F
	New Portland EB-L	**8.6**	**A**	8.5	A	8.5	A	8.7	A	8.8	A	8.7	A
	New Portland WB-L	**8.1**	**A**	8.2	A	8.2	A	8.1	A	8.0	A	8.1	A
Route 114 @ Day Rd.	Day Rd. WB-LR	**23.9**	**C**	95.7	F	24.4	C	32.5	D	24.2	C	18.2	C
	Route 114 SB-L	**10.8**	**B**	9.0	A	9.0	A	9.0	A	8.9	A	9.1	A
Route 25 @ Flaggy Meadow	Flaggy Meadow NB-LTR	**41.5**	**E**	15.3	C	16.3	C	12.8	B	12.4	B	13.2	B
	College Ave SB-LTR	**327.9**	**F**	27.9	D	32.5	D	19.8	C	17.8	C	20.5	C
	Route 25 EB-L	**10.1**	**B**	9.2	A	9.6	A	9.1	A	8.4	A	8.6	A
	Route 25 WB-L	**8.9**	**A**	8.0	A	8.1	A	7.5	A	7.5	A	7.6	A
Route 25 @ Cressey	Route 25 WB-L	**8.6**	**A**	7.9	A	8.1	A	7.6	A	7.4	A	7.5	A
	Cressey Rd. NB-LR[1]	**331.5**	**F**	24.1	C	31.5	D	21.9	C	14.5	B	16.0	C
Cressey @ Flaggy Meadow	Flaggy Meadow EB-L	**7.6**	**A**	7.4	A	7.4	A	7.4	A	7.5	A	7.5	A
	Flaggy Meadow WB-L	**7.5**	**A**	7.6	A	7.4	A	7.6	A	7.5	A	7.5	A
	Cressey Rd. NB-LTR	**14.3**	**B**	13.6	B	11.3	B	12.7	B	12.1	B	12.8	B
	Cressey Rd. SB-LTR	**11.6**	**B**	9.7	A	9.7	A	9.6	A	10.1	B	10.0	B
Route 202/4 @ Route 25 - East	Route 25 EB-L	**10.5**	**B**	10.5	B	10.3	B	9.2	A	9.2	A	9.2	A
	Route 202/4 SB-LR[1]	**25.6**	**D**	24.9	C	23.6	C	14.4	B	14.5	B	14.7	B
Route 202/4 @ Route 25 - West	Route 25 EB-L	**10.7**	**B**	9.4	A	9.7	A	9.2	A	8.8	A	9.0	A
	Route 25 WB-L	**10.4**	**B**	8.8	A	8.9	A	8.2	A	8.1	A	8.3	A
	Route 202/4 NB-L	**466.1**	**F**	79.3	F	98.4	F	49.4	E	39.9	E	52.3	F
	Route 202/4 NB-TR	**412.5**	**F**	48.4	E	59.8	F	22.6	C	19.3	C	24.4	C
	Maple St. SB-LTR	**466.1**	**F**	186.3	F	275.7	F	87.5	F	61.0	F	97.8	F
Route 202/4 @ Cressey Rd.	Route 202/4 EB-L	**8.6**	**A**	8.4	A	8.2	A	8.2	A	8.2	A	8.2	A
	Cressey Rd. SB-LR[1]	**13.6**	**B**	12.4	B	12.1	B	12.3	B	12.6	B	12.4	B
Route 25 @ Libby - West	Route 25 EB-L	**8.6**	**A**	8.6	A	8.6	A	7.6	A	7.6	A	7.6	A
	Route 25 WB-L	**7.7**	**A**	7.9	A	7.9	A	7.4	A	7.4	A	7.4	A
	Libby NB-LTR	**267.8**	**F**	173.3	F	237.0	F	11.5	B	14.3	B	11.6	B
	Libby SB-LTR	**267.8**	**F**	173.3	F	237	F	7.3	A	7.4	A	7.2	A
Route 25 @ Rte. 237 (Mosher's Corner)	Route 25 EB-L	**11.7**	**B**	11.6	B	11.5	B	**See Signalized Analysis**		**See Signalized Analysis**		**See Signalized Analysis**	
	Rte. 237 SB-L	**40.4**	**E**	39.7	E	40.6	E						
	Rte. 237 SB-R	**12.4**	**B**	11.6	B	11.6	B						

[1]This was treated as a two-lane approach in HCS 3.1c (as opposed to a flared approach), even though it is not striped as such. The value listed in the "delay" column represents the

A total of 23 roadway segments were analyzed under future year 2005 conditions. These represent the locations that would be most affected by the various bypass alternatives. With the No-Build Alternative, 10 of the 23 roadway segments would have a LOS E during one or both peak hours in year 2005. Four of these segments would have a v/c ratio of 0.75 or greater, indicating that at least 75% of the segments' available traffic capacity is used. With Alternative 1c, seven segments would be at LOS E during one or both peak hours, and only two segments would have a v/c ratio of 0.75 or greater. Similarly with Alternative 1e, seven segments would be at LOS E during one or both peak hours, and only two segments would have a v/c ratio of 0.75 or greater. With Alternative 6b, six segments would be at LOS E during one or both peak hours, and no segments would have a v/c ratio of 0.75 or greater. With Alternative 6c, two segments would be at LOS E during one or both peak hours, and no segments would have a v/c ratio of 0.75 or greater. With Alternative 6d, three segments would be at LOS E during one or both peak hours, and no segments would have a v/c ratio of 0.75 or greater. For Alternatives 6b, 6c, and 6d, three segments of the bypass road would be at LOS E during one or both peak hours because prevailing physical considerations will not accommodate a better LOS. However, v/c ratios on these segments. an indicator of congestion, will be well under 0.75, indicating ample roadway capacity will exist.

Table 7-13 Highway Level of Service, 2005 AM Peak Hour

ROADWAY LOCATION	No-Build		Alternative 1c		Alternative 1e		Alternative 6b		Alternative 6c		Alternative 6d	
	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
RTE 25: WEST OF CRESSEY	E	0.86	E	0.65	E	0.70	E	0.67	D	0.46	E	0.54
RTE 25: EAST OF CRESSEY	E	0.74	E	0.57	E	0.63	E	0.53	D	0.37	D	0.46
RTE 25: FLAGGY MEADOW TO RTE 202	E	0.73	E	0.57	E	0.62	D	0.51	D	0.41	D	0.52
RTE 25:WEST OF RTE 114	E	0.90	E	0.71	E	0.73	E	0.64	E	0.59	E	0.65
RTE 25: EAST OF RTE 114	E	0.89	E	0.87	E	0.88	E	0.65	E	0.65	E	0.66
RTE 25: EAST OF NEW PORTLAND RD.	D	0.56	D	0.56	E	0.57	D	0.37	D	0.39	D	0.39
RTE 25 (E): EAST OF 202	D	0.40	D	0.40	D	0.41	C	0.26	C	0.27	C	0.27
RTE 202: EAST OF CRESSEY	C	0.33	C	0.26	C	0.24	C	0.27	C	0.27	C	0.26
RTE 202: WEST OF CRESSEY	C	0.31	C	0.28	C	0.22	C	0.25	C	0.25	C	0.23
RTE 202 (E): NORTH OF 25	C	0.23	C	0.25	C	0.24	C	0.20	C	0.21	C	0.21
RTE 114: SOUTH OF DAY	D	0.54	D	0.43	D	0.42	D	0.41	D	0.40	D	0.40
RTE 114: NORTH OF DAY	D	0.57	D	0.39	D	0.41	D	0.37	D	0.38	D	0.41
RTE 114: SOUTH OF DOWNTOWN	D	0.54	C	0.32	D	0.36	C	0.33	C	0.30	D	0.37
RTE 114 N OF DOWNTOWN	D	0.39	D	0.40	D	0.41	C	0.18	C	0.25	C	0.26
BRACKETT RD	C	0.25	C	0.23	C	0.25	C	0.28	C	0.25	C	0.30
CRESSEY: 202 TO FLAGGY	C	0.29	D	0.32	C	0.27	C	0.27	C	0.26	C	0.26
CRESSEY: FLAGGY TO 25	C	0.27	C	0.17	C	0.17	C	0.21	C	0.18	C	0.18
DAY RD	B	0.05	D	0.41	A	0.03	E	0.53	A	0.04	A	0.03
FLAGGY: EAST OF CRESSEY	C	0.19	B	0.08	B	0.09	A	0.05	B	0.13	B	0.15
FLAGGY: WEST OF CRESSEY	C	0.22	C	0.24	C	0.18	C	0.16	C	0.22	C	0.24
LIBBY AVE	C	0.20	C	0.14	C	0.19	C	0.25	C	0.25	D	0.29
NEW PORT RD: E OF BRACKETT	E	0.56	E	0.56	E	0.55	E	0.54	E	0.54	E	0.54
NEW PORT RD: W OF BRACKETT	D	0.50	D	0.47	D	0.46	D	0.46	D	0.45	D	0.46
BY-PASS: EAST OF RTE 114 NORTH	Not Applicable		Not Applicable		Not Applicable		E	0.48	E	0.50	E	0.51
BY-PASS: EAST OF RTE 202 EAST							D	0.38	D	0.39	D	0.39
BY-PASS: EAST OF LIBBY							D	0.38	D	0.39	D	0.39
BY-PASS: N OF RTE 25 W							C	0.24	D	0.39	D	0.40
BY-PASS: S OF RTE 202/4	Not Applicable		D	0.40	C	0.31	D	0.41	D	0.37	C	0.27
BY-PASS: S OF RTE 25 W			C	0.28	C	0.28	C	0.18	C	0.24	C	0.16

Table 7-14 Highway Level of Service, 2005 PM Peak Hour

ROADWAY LOCATION	No-Build		Alternative 1c		Alternative 1e		Alternative 6b		Alternative 6c		Alternative 6d	
	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
RTE 25: WEST OF CRESSEY	E	0.83	E	0.59	E	0.65	E	0.62	D	0.39	E	0.47
RTE 25: EAST OF CRESSEY	E	0.77	E	0.58	E	0.64	E	0.57	D	0.37	D	0.45
RTE 25: FLAGGY MEADOW TO RTE 202	E	0.70	D	0.55	E	0.59	D	0.51	D	0.38	D	0.47
RTE 25:WEST OF RTE 114	E	1.00	E	0.80	E	0.82	E	0.69	E	0.64	E	0.70
RTE 25: EAST OF RTE 114	E	0.90	E	0.86	E	0.87	E	0.66	E	0.64	E	0.66
RTE 25: EAST OF NEW PORTLAND RD.	E	0.66	E	0.66	E	0.68	D	0.47	D	0.48	D	0.49
RTE 25 (E): EAST OF 202	D	0.49	D	0.48	D	0.50	C	0.33	C	0.33	D	0.34
RTE 202: EAST OF CRESSEY	D	0.37	C	0.32	C	0.29	C	0.31	C	0.32	C	0.31
RTE 202: WEST OF CRESSEY	C	0.29	C	0.28	C	0.22	C	0.24	C	0.24	C	0.23
RTE 202 (E): NORTH OF 25	C	0.22	C	0.24	C	0.23	C	0.19	C	0.20	C	0.20
RTE 114: SOUTH OF DAY	D	0.59	D	0.51	D	0.47	D	0.48	D	0.44	D	0.43
RTE 114: NORTH OF DAY	E	0.65	D	0.43	D	0.48	D	0.40	D	0.41	D	0.44
RTE 114: SOUTH OF DOWNTOWN	E	0.62	D	0.40	D	0.44	D	0.35	D	0.35	D	0.42
RTE 114 N OF DOWNTOWN	E	0.48	D	0.43	D	0.45	C	0.21	C	0.28	D	0.31
BRACKETT RD	C	0.24	C	0.22	C	0.24	C	0.27	C	0.24	C	0.29
CRESSEY: 202 TO FLAGGY	C	0.16	C	0.20	B	0.14	C	0.15	B	0.14	B	0.14
CRESSEY: FLAGGY TO 25	C	0.16	B	0.06	B	0.06	B	0.10	B	0.06	B	0.06
DAY RD	B	0.11	D	0.42	B	0.13	D	0.32	B	0.06	A	0.03
FLAGGY: EAST OF CRESSEY	B	0.17	B	0.10	B	0.09	B	0.07	B	0.14	B	0.15
FLAGGY: WEST OF CRESSEY	C	0.21	C	0.23	C	0.17	C	0.20	C	0.23	C	0.24
LIBBY AVE	C	0.24	C	0.15	C	0.21	D	0.30	D	0.33	D	0.35
NEW PORT RD: E OF BRACKETT	E	0.46	D	0.42	D	0.43	D	0.44	D	0.46	D	0.45
NEW PORT RD: W OF BRACKETT	D	0.38	D	0.34	C	0.33	C	0.32	C	0.31	C	0.32
BY-PASS: EAST OF RTE 114 NORTH	Not Applicable		Not Applicable		Not Applicable		E	0.56	E	0.62	E	0.63
BY-PASS: EAST OF RTE 202 EAST							E	0.46	E	0.50	E	0.50
BY-PASS: EAST OF LIBBY							E	0.46	E	0.50	E	0.50
BY-PASS: N OF RTE 25 W							C	0.26	D	0.42	D	0.44
BY-PASS: S OF RTE 202/4	Not Applicable		D	0.50	C	0.35	D	0.46	D	0.42	C	0.29
BY-PASS: S OF RTE 25 W			D	0.28	C	0.21	C	0.21	C	0.28	C	0.19

The same 23 roadway segments were analyzed under future year 2025 conditions. These represent the locations that would be most affected by the various bypass alternatives. With the No-Build Alternative, 11 of the 23 roadway segments would have a LOS E or worse during one or both peak hours in year 2025. Five of these segments would have a v/c ratio of 0.75 or greater, indicating that at least 75% of the segments' available traffic capacity is used. With Alternative 1c, 11 segments would be at LOS E during one or both peak hours, and only two segments would have a v/c ratio of 0.75 or greater. With Alternative 1e, eight segments would be at LOS E during one or both peak hours, and only two segments would have a v/c ratio of 0.75 or greater. With Alternative 6b, six segments would be at LOS E during one or both peak hours, and one segment would have a v/c ratio of 0.75 or greater. With Alternative 6c, four segments would be at LOS E during one or both peak hours, and no segments would have a v/c ratio of 0.75 or greater. With Alternative 6d, four segments would be at LOS E during one or both peak hours, and one segment would have a v/c ratio of 0.75 or greater. For Alternatives 1c, 6b, 6c, and 6d, between one and four segments of the bypass road would be at LOS E during one or both peak hours because prevailing physical considerations will not accommodate a better LOS. However, v/c ratios on these segments. an indicator of congestion, will be well under 0.75, indicating ample roadway capacity will exist.

Table 7-15 Highway Level of Service, 2025 AM Peak Hour

ROADWAY LOCATION	No-Build		Alternative 1c		Alternative 1e		Alternative 6b		Alternative 6c		Alternative 6d	
	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
RTE 25: WEST OF CRESSEY	F	1.00	E	0.68	E	0.75	E	0.71	E	0.52	E	0.57
RTE 25: EAST OF CRESSEY	E	0.79	E	0.60	E	0.67	E	0.58	D	0.43	D	0.48
RTE 25: FLAGGY MEADOW TO RTE 202	E	0.75	E	0.58	E	0.64	D	0.54	D	0.45	D	0.50
RTE 25:WEST OF RTE 114	E	0.95	E	0.72	E	0.76	E	0.68	E	0.63	E	0.69
RTE 25: EAST OF RTE 114	E	0.91	E	0.91	E	0.89	E	0.69	E	0.69	E	0.70
RTE 25: EAST OF NEW PORTLAND RD.	D	0.56	E	0.58	E	0.57	D	0.38	D	0.39	D	0.39
RTE 25 (E): EAST OF 202	D	0.41	D	0.39	D	0.39	C	0.25	C	0.24	C	0.23
RTE 202: EAST OF CRESSEY	D	0.36	C	0.28	C	0.28	C	0.28	C	0.29	C	0.30
RTE 202: WEST OF CRESSEY	D	0.35	C	0.31	C	0.27	C	0.29	C	0.29	C	0.28
RTE 202 (E): NORTH OF 25	C	0.24	C	0.26	C	0.25	C	0.22	C	0.24	C	0.25
RTE 114: SOUTH OF DAY	E	0.67	C	0.25	D	0.43	D	0.46	D	0.42	D	0.44
RTE 114: NORTH OF DAY	E	0.68	D	0.54	D	0.51	D	0.44	D	0.43	D	0.50
RTE 114: SOUTH OF DOWNTOWN	E	0.64	D	0.40	D	0.47	D	0.42	D	0.39	D	0.48
RTE 114 N OF DOWNTOWN	E	0.46	E	0.48	E	0.47	C	0.25	D	0.33	D	0.35
BRACKETT RD	D	0.38	B	0.30	C	0.33	D	0.36	D	0.35	D	0.36
CRESSEY: 202 TO FLAGGY	D	0.33	C	0.37	C	0.30	C	0.22	C	0.28	C	0.28
CRESSEY: FLAGGY TO 25	D	0.31	C	0.18	C	0.19	C	0.22	C	0.18	C	0.18
DAY RD	A	0.03	E	0.74	B	0.14	E	0.67	B	0.11	B	0.09
FLAGGY: EAST OF CRESSEY	C	0.20	B	0.10	B	0.08	B	0.07	B	0.13	B	0.14
FLAGGY: WEST OF CRESSEY	C	0.24	D	0.32	C	0.20	C	0.22	C	0.25	C	0.27
LIBBY AVE	D	0.33	C	0.24	C	0.27	D	0.35	D	0.35	D	0.35
NEW PORT RD: E OF BRACKETT	E	0.56	E	0.59	E	0.56	E	0.57	E	0.57	E	0.56
NEW PORT RD: W OF BRACKETT	D	0.51	D	0.49	D	0.49	D	0.48	D	0.48	D	0.48
BY-PASS: EAST OF RTE 114 NORTH	Not Applicable		Not Applicable		Not Applicable		E	0.48	E	0.61	E	0.61
BY-PASS: EAST OF RTE 202 EAST							D	0.35	D	0.45	D	0.46
BY-PASS: EAST OF LIBBY							D	0.35	D	0.45	D	0.46
BY-PASS: N OF RTE 25 W							C	0.20	D	0.38	D	0.39
BY-PASS: S OF RTE 202/4	Not Applicable		E	0.53	D	0.44	D	0.50	D	0.47	D	0.42
BY-PASS: S OF RTE 25 W			D	0.35	C	0.25	C	0.21	D	0.29	C	0.24

Table 7-16 Highway Level of Service, 2025 PM Peak Hour

ROADWAY LOCATION	No-Build		Alternative 1c		Alternative 1e		Alternative 6b		Alternative 6c		Alternative 6d	
	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C
RTE 25: WEST OF CRESSEY	F	1.00	E	0.64	E	0.72	E	0.65	D	0.46	E	0.50
RTE 25: EAST OF CRESSEY	E	0.83	E	0.62	E	0.70	E	0.59	D	0.43	D	0.48
RTE 25: FLAGGY MEADOW TO RTE 202	E	0.74	E	0.57	E	0.62	D	0.49	D	0.41	D	0.45
RTE 25:WEST OF RTE 114	F	1.05	E	0.82	E	0.86	E	0.75	E	0.70	E	0.76
RTE 25: EAST OF RTE 114	E	0.91	E	0.90	E	0.89	E	0.69	E	0.68	E	0.69
RTE 25: EAST OF NEW PORTLAND RD.	E	0.67	E	0.67	E	0.65	D	0.46	D	0.47	D	0.48
RTE 25 (E): EAST OF 202	D	0.49	D	0.47	D	0.46	D	0.31	C	0.29	C	0.28
RTE 202: EAST OF CRESSEY	D	0.43	D	0.35	D	0.34	D	0.34	D	0.35	D	0.35
RTE 202: WEST OF CRESSEY	D	0.33	D	0.33	C	0.29	C	0.29	C	0.29	C	0.29
RTE 202 (E): NORTH OF 25	C	0.23	C	0.26	C	0.25	C	0.21	C	0.23	C	0.24
RTE 114: SOUTH OF DAY	E	0.71	E	0.54	D	0.47	D	0.47	D	0.46	D	0.48
RTE 114: NORTH OF DAY	E	0.73	D	0.49	D	0.57	D	0.46	D	0.46	D	0.55
RTE 114: SOUTH OF DOWNTOWN	E	0.73	D	0.48	D	0.56	D	0.46	D	0.46	D	0.54
RTE 114 N OF DOWNTOWN	E	0.56	E	0.51	E	0.54	D	0.31	D	0.39	D	0.42
BRACKETT RD	D	0.35	C	0.29	C	0.32	D	0.35	D	0.33	D	0.35
CRESSEY: 202 TO FLAGGY	C	0.21	C	0.24	C	0.17	C	0.19	C	0.15	C	0.15
CRESSEY: FLAGGY TO 25	C	0.21	B	0.07	B	0.08	B	0.11	B	0.06	B	0.07
DAY RD	B	0.04	D	0.49	C	0.18	D	0.37	B	0.12	B	0.11
FLAGGY: EAST OF CRESSEY	C	0.19	B	0.14	B	0.10	B	0.10	B	0.14	B	0.16
FLAGGY: WEST OF CRESSEY	C	0.21	C	0.31	C	0.20	C	0.25	C	0.25	C	0.28
LIBBY AVE	D	0.37	C	0.28	D	0.31	D	0.41	D	0.42	D	0.41
NEW PORT RD: E OF BRACKETT	E	0.56	E	0.50	E	0.48	E	0.49	E	0.50	E	0.49
NEW PORT RD: W OF BRACKETT	D	0.40	E	0.38	D	0.38	D	0.37	D	0.36	D	0.37
BY-PASS: EAST OF RTE 114 NORTH	Not Applicable		Not Applicable		Not Applicable		E	0.63	E	0.69	E	0.69
BY-PASS: EAST OF RTE 202 EAST							D	0.45	E	0.48	E	0.49
BY-PASS: EAST OF LIBBY							D	0.45	E	0.48	E	0.49
BY-PASS: N OF RTE 25 W							C	0.29	E	0.51	E	0.52
BY-PASS: S OF RTE 202/4	Not Applicable		E	0.60	D	0.48	E	0.55	D	0.52	D	0.45
BY-PASS: S OF RTE 25 W			E	0.54	D	0.42	C	0.25	D	0.34	C	0.28

7.3 Vehicle-Miles/Vehicle-Hours Traveled

Each build alternative would have an impact on travel patterns in Gorham Village and the Study Area. For some trips, the alternatives offer routes that are shorter in both time and distance when compared to existing routes. For other trips, the alternatives offer routes that are shorter in time, but longer in distance. For the remaining trips, the existing route may remain the most attractive. The combination of impacts on route choices results in either a net reduction or increase in VMT and VHT for the study area. In this case, the study area is the area contained by the PACTS travel demand model.

Table 7-17 below shows the VMT and VHT forecasts for each of the bypass alternatives. These values represent totals for the PACTS travel demand model area, but are influenced only by the infrastructure changes of the bypass alternatives. Values shown are for PM peak hour conditions. Compared to the No-Build Alternative, VMT would be similar or decrease slightly for Alternatives 1c,1e, and 6d. VMT would slightly increase for Alternatives 6b and 6c. VHT would decrease for all build alternatives.

Table 7-17 2005 and 2025 Vehicle-Miles Traveled (VMT) and Vehicle-Hours Traveled (VHT)

Alternative	2005 VMT	2005 VHT	2025 VMT	2025 VHT
No-Build	527,928	21,315	594,866	26,210
Alternative 1c	527,435	21,027	593,907	25,929
Alternative 1e	527,931	21,212	594,799	25,933
Alternative 6b	528,767	21,063	595,280	26,028
Alternative 6c	528,120	20,952	595,500	25,656
Alternative 6d	527,918	21,003	594,753	25,826

7.4 Crash Reductions

As part of the existing conditions documentation (see Section 2.1.4, page 2-13), 11 High Crash Location intersections (nodes) and five High Crash Location roadway segments (links) were identified within the Study Area. Reductions in the number of crashes can be achieved in part by reducing vehicle-miles traveled (VMT), but primarily by diverting traffic from locations with high incidents of crashes (village streets with numerous curb cuts) to locations with anticipated low incidents of crashes (highways with controlled or limited access). Of the 11 node and five link high crash locations, the majority (14 out of 16) are associated with Route 25 and Route 114 south.

Table 7-18 below identifies the number of anticipated improvements to High Crash Locations (out of 16 HCL's) for each build alternative.

Table 7-18 # of Anticipated Improvements to HCL's

	Alternative 1c	Alternative 1e	Alternative 6b	Alternative 6c	Alternative 6d
# of Anticipated Improvements to HCL's	12	12	13	13	13

This Page Intentionally Left Blank

8. UTILITIES

8.1 Utilities

8.1.1 General

A variety of utilities exist within the Study Area. The five bypass alternatives cross numerous utilities including major overhead power lines, high-pressure gas lines, transmission water mains, and fiber optic lines. The following utility companies have facilities within the Study Area;

- Central Maine Power
- Verizon Communications
- Maritimes and Northeast Pipeline
- Standish Telephone Company
- Portland Water District
- Time Warner Cable
- Town of Gorham

The five bypass alternatives were designed in an effort to avoid or minimize utility impacts. Specifics on utility impacts are herein discussed.

8.1.2 Central Maine Power

Central Maine Power (CMP) has a 76 m (250 ft.) wide right-of-way corridor extending across the southern portion of the Study Area limits. High voltage transmission lines supported on wooden pole structures exist within this corridor. Alternatives 1e and 6d would cross this corridor near the Route 114 intersection, south of Gorham Village. At the utility crossing, the new bypass would be on approximately 1.5 m (5 ft.) of fill. Due to the uncertainty of pole locations and the minor fill condition two wooden pole structures might be impacted and require relocation.

A second CMP right-of-way corridor, approximately 122 m (400 ft.) in width, is located east of Gorham Village near the Route 25 - Route 237 intersection (Mosher Corner). Within the corridor, numerous high voltage transmission lines exist, with some on large steel pole structures. Alternatives 6b, 6c, and 6d would cross this corridor near Mosher Corner. The alternatives were designed to avoid impacting the steel pole structures. With road fills approaching 3 m (10 ft.), utility impact would not be expected. If necessary, minor adjustments to the alternatives' vertical geometry could made in an effort to avoid utility impacts.

8.1.3 Verizon Communications

Verizon has a cellular tower located near Route 114, north of Gorham Village and a small switching building at the Route 114 - Route 22 intersection, south of the village. Neither facilitiy would be impacted by the bypass alternatives.

8.1.4 Maritimes and Northeast Pipeline

Maritimes and Northeast Pipeline has an underground 750 mm (30 inch) high pressure gas line located within both CMP right-of-way corridors. Alternatives 1e and 6d would cross this gas line near the Route 114 intersection, south of Gorham Village. At the utility crossing, the new bypass would be in a 1.5 m (5 ft.) fill condition. With this minor fill, a utility impact would not be expected. If necessary, minor adjustments to the alternative vertical geometry could made in an effort to minimize utility impacts.

Alternatives 6b, 6c, and 6d would cross this gas line near the Route 25 - Route 237 intersection. With road fills approaching 3 m (10 ft.), an impact to this utility would not be expected. If necessary, minor adjustments to the alternatives vertical geometry could made in an effort to minimize utility impacts.

8.1.5 Standish Telephone Company

Standish Telephone Company has an underground fiber optics line within the 122 m (400 ft.) wide CMP right-of-way corridor, located east of Gorham Village. Alternatives 6b, 6c, and 6d would cross this fiber optics line near the Route 25 - Route 237 intersection. With roadway fills approaching 3 m (10 ft.), no utility impact would be expected, except for sleeving of the utility at the crossing. If necessary, minor adjustments to the alternatives vertical geometry could made in an effort to minimize utility impacts.

8.1.6 Portland Water District

Portland Water District has a 1.1 m (42 inch) water main and a 1.2 m (48 inch) water main within the Study Area. Both mains are located east of Gorham Village between Libby Avenue and Route 237. Both mains would be crossed by Alternatives 6b, 6c, and 6d. With road fills up to 1.8 m (6 ft.) at the 1.1 m (42 inch) water main crossing, an impact to this utility would not be expected, except for sleeving of the utility at the crossing. If necessary, minor adjustments to the alternatives vertical geometry could made in an effort to minimize utility impacts.

At the 1.2 m (48 inch) water main crossing, roadway cuts up to 0.6 m (2 ft.) would be expected. Due to the minor cut condition, relocation and sleeving of this main would be required. If necessary, minor adjustments to the alternative's vertical geometry could made in an effort to minimize utility impacts.

8.1.7 Time Warner Cable

Time Warner Cable has numerous cable lines within the right-of-way of existing road. No impact to transmission utilities would be expected.

8.1.8 Town of Gorham

The Town of Gorham has a 600 mm (24 inch) sewer main located within the railroad corridor, east of Gorham Village. None of the build alternatives would be expected to impact the sewer main the alternatives.

9.0 Costs

The preliminary cost estimates for the build alternatives are based on the conceptual/preliminary designs and MDOT's historic average construction cost data for built projects. MDOT compiles actual construction cost data based on size and classification of the facility and based on the geographic region. For the Gorham Bypass alternatives, the average costs per unit are:

Normal two-lane section	$1,200,000 per mile
Truck lane	$ 150,000 per mile
Cost per intersection	$ 375,000 each
Bridge cost	$ 165 per square foot

Design engineering and construction engineering costs are added at 30% of the total construction costs. Environmental mitigation costs are added at a cost of $125,000 per acre of wetland mitigation.

Property values within the study area were determined from the Town of Gorham Assessor property database. The Town completes property and building valuations every few years in order to determine the taxable value per parcel. A town-wide property valuation was completed in 1993 in which both buildings and land parcels were assessed for their market value. During the spring of 2001, the Town of Gorham underwent a revaluation of all property. This data was made available in the fall of 2001. Discussions with the Town Assessor indicated that property values have increased on average between 30 to 40 percent. For the purposes of this study and to estimate approximate property acquisition costs for the study alternatives, the 1993 property and building valuations were used and increased on average by 35 percent, to reflect more current valuations.

The total estimated costs for the build alternatives are tabulated in Table 9-1, page 9-2. Estimated costs range from approximately $9 million for Alternative 1c to approximately $26 million for Alternative 6d. The cost of the Upgrade Alternative would range from approximately $9.4 million to $14.3 million, depending on the extent of property that would need to be acquired in the Gorham Village area.

This Page Intentionally Left Blank

BIBLIOGRAPHY

Bibliography

Maine Department of Transportation. 1999. Group Means Facts. Augusta, ME.

National Environmental Policy Act, 40 CFR Part 1500-1508.

Portland Area Comprehensive Transportation Committee (PACTS). 1997. Gorham-Portland Corridor Alternative Analysis. Portland, ME.

Transportation Research Board. Highway Capacity Manual. 2000. Special Report 209.